44-413/613

Visualization/Data Visualization

FALL-2023

COURSE SYLLABUS

NORTHWEST
MISSOURI STATE UNIVERSITY

I. Course Title

CSIS 44-413 Visualization
CSIS 44-613 Data Visualization

II. Course Credit

Three credit hours

III. Prerequisites

Coursework equivalent to general statistics and programming.

IV. Course Professor

Name: Dr. Prasad Chetti
Title: Assistant Professor
Phone: (660)562-1551
Email: pchetti@nwmissouri.edu
Office Location: CH 2930

V. Course Description

This course covers the design and development of exploratory diagrams and graphics for various data sets. The course may include concepts such as chart and graph design, networks, topological graphs, display of multi-dimensional data, effective use of space and color, animations, interactive visualizations, mapping, cartography, web data acquisition, and advanced visualization tools.

VI. Course Rationale

This course allows students to learn how to use appropriate standard and advanced visualization techniques for large data sets. This course will familiarize students to visualization tools (ex: MS Excel, and Tableau).

VII. Learning Outcomes

Upon completion of the course students will be able to:

Learning outcomes	Assessment Methods
CO 1: Recognize the business needs to recommend data-driven solutions CO 2: Analyze the data sets to generate various diagrams, charts or graphs	Assignments, Quizzes, Class Participation, and Projects

Learning outcomes	Assessment Methods
CO 3: Apply appropriate data visualization techniques, skills, and tools necessary for different data domains CO 4: Design interactive dashboards & storyboards using Tableau for decision making CO 5: Communicate results to the stakeholders with a cohesive data story CO 6: Identify the most appropriate visualization method for a given type of data and task CO 7: Develop skills to both design and critique visualizations	

VIII. Materials

Textbook or supplementary materials

There are no required textbooks for this course.

Other Resources

Online materials as provided on the Northwest Online.

IX. Course Outline and Expectations

Instructional Methods and Techniques

This course is delivered entirely as in class mode. Participation is expected and required. Because of this instructional method, it is imperative that each student reads the assigned material and attends classroom discussions, threaded discussions. Students will be responsible for reading materials, engaging in classroom discussions, and completing assignments. Instructional methods include lectures, individual work, and quizzes.

Participation/Attendance

Students are responsible for interacting with the Northwest Online course site on a regular basis and meeting all deadlines. Class participation is required.

Code of Academic Integrity

Please refer to the following link to view Northwest Missouri State University's Code of Academic Integrity Policy
https://www.nwmissouri.edu/policies/academics/Academic-Integrity.pdf

Family Educational Rights and Privacy Act (FERPA)

Family Educational Rights and Privacy Act of 1974, as amended (commonly known as the Buckley Amendment), is a federal law which provides that colleges and universities will maintain the confidentiality of student education records. Please refer to the Family Educational Rights and Privacy Act (FERPA) Policy at
http://www.nwmissouri.edu/policies/academics/Family-Educational-Rights-and-Privacy-Act.pdf

Learning or Living Accommodations Request Process:

Northwest Missouri State University complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 [ADA] and the ADA Amendments Act of 2008 [ADAAA]. If a student has a documented disability that qualifies under the ADA/ADAAA and requests accommodations, they should review the Accessibility and Accommodations webpage at
https://www.nwmissouri.edu/titleixequity/accessibility/index.htm for guidance, including the accommodations application and supporting documentation requirements. Contact ada@nwmissouri.edu or 660.562.1873 for further assistance. For the university policy on disability accommodation refer to
http://www.nwmissouri.edu/policies/student/Disability-Accommodation.pdf

Non-discrimination and anti-harassment policy

Northwest Missouri State University is committed to maintaining an environment for all faculty, staff, students, and third parties that is free of illegal discrimination and harassment. Please refer to the Non-Discrimination and Anti-Harassment Policy at
https://www.nwmissouri.edu/policies/student/Title-VI-Non-Discrimination-and-Anti-Harassment.pdf

Course Communication Policy

In this course, we will use Canvas communication system or email the instructor at pchetti@nwmissouri.edu

X. Technology Requirements

Computer/Technology Requirements

- Ability to use the Canvas learning environment.

- Proficiency in using MS Word, MS Excel, MS PowerPoint and attaching these files to your assignment submissions.

Software used in this course

Latest versions of MS Excel and Tableau on Windows environment

Northwest Online (Canvas)

Access to Northwest Online is at: https://www.nwmissouri.edu/online

XI. Grading and Evaluation

Final grade calculation

Assessments	Points
Quizzes	30
Assignments	100
In-class activities	200
Final Project	100
Discussions	70
Total	500

Grading

In determining the final course grade, the following scale is used:

Undergraduate Credit (44-413)	
Percent Range	**Grade**
88-100%	A
>= 78% and < 88%	B
>= 68% and < 78%	C
>= 58% and < 68%	D
below 58%	F

Graduate Credit (44-613)

Percent Range	Grade
90-100%	A
>= 80% and < 90%	B
>= 70% and < 80%	C
>= 60% and < 70%	D
below 60%	F

Rubrics

See under Assignments in Northwest Online

Quizzes

Under any circumstance, students will be allowed to take each quiz only once before the due date.

Late Work Policy

No late work is allowed. Files with incorrect extensions and naming conventions receive 0 credit.

XII. Course Evaluation

At the end of this course, students are encouraged to complete a course evaluation that will be distributed to them via email and through a course link.

XIII. Course Topics

Module	Content
Module 1	Introduction to visualization concepts and tools
Module 2	Data cleaning, preparation and ethics
Module 3	Charts I
Module 4	Charts II
Module 5	Geospatial data visualization
Module 6	Dashboards and storyboards
Module 7	Final project

XIV. Additional Course Information

Syllabus Subject to Change: Course schedule is subject to change and you will be responsible for abiding by any such changes. Your instructor will notify you of any changes.

While information and assurances are provided in this course syllabus, it should be understood that content may change in keeping with new research and literature and that events beyond the control of the instructor could occur. Students will be informed of any substantive occurrences that will produce syllabus changes.

XV. Final Exam Schedule (Final Presentations)

The final exam is scheduled on
Section 01: Tuesday, December 5th 9:40am-11:40am
Section 02: Monday, December 4th :7pm-9pm