

**Cleveland State University
Levin College of Urban Affairs
Department of Urban Studies
Instructor: Winifred Weizer**

**Urban Data Analysis UST 404 Section 50
Fall, 2008 W 6 to 9:50 pm UR 106
Email: w.weizer @csuohio.edu or**

Office hours: By appointment (UR 213) Phone: 216-523-7574

Course Description: This course is a four credit course designed to introduce the student to the basic principles, techniques and the logic of data analysis. It also will familiarize the student with statistical reasoning. This course focuses on core statistical concepts and techniques that are used in many fields.

Course Objective: This course focuses on knowledge and skill development in the statistical area. The course is designed to meet the following learning objectives:

Knowledge

- Understand mathematical models, graphs, tables and schematics and how to interpret and draw inferences from them.
- Recognize and interpret mathematical information when presented symbolically, visually, numerically or verbally.
- Understanding of alternatives that can be used in mathematical or statistical analysis and how to achieve optimal results.
- Recognize the limits of mathematical and statistical models and be able to explain how those limits affect everyday decision making.
- Understanding of how mathematical and statistical information can assist in analysis, syntheses and evaluation of complex urban problems.

Skills

- Use of arithmetic, algebraic, geometric, and statistical models to solve problems.
- Understanding how to calculate formulae.
- Use of technology to solve mathematical and statistical problems as well as to prepare graphs and charts.
- Development of the means used to estimate and check answers to mathematical problems.
- Representation of mathematical information in a symbolic, visual, or verbal manner that has clarity of result.

Course Requirements: Students are expected to attend all class periods, submit homework assignments when due, complete all learning enhancers, the midterm and final. The student will also analyze a research project. Student success is enhanced by keeping up to date with *required* readings. Class attendance is also critical to the student being successful. In order to encourage the student to look through the material before class the attendance will be taken throughout the semester by means of a brief quiz on the reading material. Students are also strongly encouraged to print out copies of the instructor's PowerPoint presentations. These are accessible in .pdf format (3 up with lines for taking notes). The student can access them from home or school via the internet by typing

<ftp://urban.csuohio.edu> as your address. Once to the site, choose “utility” and then “weizer” and then “ust404statistics” then “adobe .pdf files”. Copies of the syllabus and the “project will also be accessible there.

Grading Policy: Grades are based on the results of homework, learning enhancers, group assignments, project, midterm, final and class participation. Homework questions are noted on the syllabus with due dates. ***The instructor will not accept homework after final submission dates which are noted in the syllabus.*** The four learning enhancers will be given as noted in the syllabus. There will also be two tests given (a midterm and the final). The grade will consist of the following;

Attendance	10%
Group Assignments	10%
Homework	10%
Project	10%
4 learning enhancers	20%
Midterm	15%
Final	25%

Exam attendance is required. Makeup exams will be given only with prior approval of the instructor.

Grading scale: 95- 100 A 94-90 A- 89-87 B+ 86-83 B 82-80 B- 79-75 C+
74-70 C 60- 69 D

Note: *The instructor reserves the right to adjust and modify the syllabus as needed throughout the semester. Attendance guarantees that the student will be apprised of all changes.*

Text: De Veaux, Richard D., Velleman, Paul F., Bock, David E. 2008 Stats: Data and Models New York, NY: Pearson Addison-Wesley

Class Schedule and Readings

Descriptive Statistics

Week 1: August 27 Course introduction, Data, Displaying and Describing Categorical Data

Read: Chapter 1 through 4

Homework: Chapter 2 - Page 15 - 18 Do 2, 8, 18 Chapter 3 - Pages 37 to 45 Do 2, 4, 8, 14, 22

August 29 Last day to add by 8:00 pm

Week 2: September 3 Finish chapter 3, Displaying and Summarizing Quantitative Data, Class Project 1

Read: Chapter 5 and 6

Homework: Chapter 4 - Page 71 to 78 Do 4, 12, 18, 22, 40
September 5 Last Day to drop by 8:00 pm

Week 3: September 10 Understanding and Comparing Distributions, Standard Deviation as a Ruler and Normal Model , Group Project 2 LE #1 Review

Read: Chapter 7

Homework: Chapter 5 - Pages 99 – 110 Do 4, 6, 12, 22, 24 Chapter 6 - Pages 134 - 139 Do 4, 6, 18, 30, 34

Modeling

Week 4: September 17 Learning Enhancer One – covers Chapter 1 through 4, Scatterplots, Association and Correlation

Read: Chapter 8 and 9

LAST DAY TO SUBMIT HOMEWORK FOR CHAPTERS 2 TO 4

Homework: Chapter 7- Pages 174 – 181 DO 2, 6, 12, 18

Week 5: September 24 Linear Regression, Regression Wisdom, Group Project 3

Read: Chapter 11 to 12

Homework: Chapter 8 - Pages 204 - 212, 264 Do 2, 4, 6, 9, 14, 21 Chapter 9 Page 231 - 237 Do 6, 18

Gathering Data

Week 6: October 1 Understanding Randomness, Sample Surveys, Learning Enhancer #2 Review

LAST DAY TO SUBMIT HOMEWORK FOR CHAPTERS 5 TO 7

Read: Chapter 13

Homework: Chapter 11 -Page 283 - 285 Do 2, 4, 6, 12 Chapter 12 - Page 308 – 311 Do 4, 12, 18

Week 7: October 8 Learning Enhancer #2 (Covers Chapters 5 to 9) Experiments and Observational Studies, Group Project 4

Read: Chapter 14, 15 and 17

Homework: Chapter 13 - Page 332 - 336 Do 2, 4, 8

Beginning of Probability

Week 8: October 15 From Randomness to Probability, Probability Rules! Probability Models Midterm Review,

Homework: Chapter 14 - Page 361 – 365 Do 4, 6, 14 Chapter 15 - Page 385 - 389 Do 2, 6, 20 Chapter 17 – Page 423 – 427 Do 6, 10

Week 9: October 22 Midterm, (covers Chapters 1 -9) Class Project 5

LAST DAY TO SUBMIT HOMEWORK FOR CHAPTERS 8 to 13

Read: Chapter 18 and 19

From Data to Inferential Statistics

Week 10: October 29 Sampling Distribution Models, Confidence Intervals for Proportions, LE # 3 Review

Read: Chapter 20 to 21

October 29: Last day to Withdraw by 8:00 pm

Homework: Chapter 18 - Page 456 - 459 Do 2, 4, 8, 16, Chapter 19 - Page 476 - 480 Do 2, 4, 8, 10, 12, 16

Week 11: November 5 Learning Enhancer #3 (Covers Chapter 13 – 17) Testing Hypothesis About Proportions, More About Tests

Read: Chapter 22 and 23

Homework: Chapter 20 - Page 498 - 501 Do 2, 4, 6, 12, 20 Chapter 21 - Page 522 – 525 Do 2, 4, 8, 12

LAST DAY TO SUBMIT HOMEWORK FOR CHAPTERS 14 THROUGH 18

Week 12: November 12 Comparing Two Proportions, Inferences About Means, Class Project 6

Read: Chapter 24 and 25

Homework: Chapter 22 as assigned Chapter 23 - Page 574 - 579 Do 2, 6, 10, 18

Week 13: November 19 Comparing Means, Paired Samples and Blocks, Learning Enhancer 4 Review

Read: Chapter 26 and 27

Homework: Chapter 24 - Chapter 25 - as assigned

Week 14: November 26 Comparing Counts, Inferences for Regression, Learning Enhancer 4

Read: Chapter 28

Homework: Chapter 26 - Chapter 27 - as assigned

Week 15: December 3 Analysis of Variance, Class Project 7, Final Review

LAST DAY TO SUBMIT HOMEWORK FOR CHAPTERS 19 THROUGH 25

December 10: Final Examination

University Policies

Students should refer to the Undergraduate Bulletin for procedures regarding add/drop and withdrawals.

Physically challenged/Special Needs

Educational access is the provision of classroom accommodations, auxiliary aids and services to ensure equal educational opportunities for all students regardless of their disability. Any student who feels he or she may need an accommodation based on the impact of a disability should contact the Office of Disability Services at (216)687-2015. The Office is located in MC 147. Accommodations need to be requested in advance and will

not be granted retroactively. Further information regarding the office can be accessed on the web at <http://www.csuohio.edu/clc/disability/>.

Writing Assistance All submitted work is to be written according to academic standards with appropriate citations. The student should contact the instructor **before** submitting work if unsure about how to paraphrase material or how to cite correctly. The Writing Center at Cleveland State is available to assist the student with writing issues. Information on the writing center is found at <http://www.csuohio.edu/writingcenter/index.html>.

Questions regarding the university calendar (holidays and finals week schedule) can be resolved by using the following link to the registrar's office.

<http://www.csuohio.edu/enrollmentservices/registrar/calendar/>