Cleveland State University	**Urban Data Analysis (UST 404 Section 1)**
Levin College of Urban Affairs	**Fall Semester, 2017 MWF 12:15 to 1:20 PM**
Department of Urban Studies	**UR107**
Instructor: Winifred Weizer	**Email:** w.weizer@csuohio.edu
Office hours: (UR216) By appointment	**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.
- Understand 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.
- Understand how mathematical and statistical information can assist in analysis, syntheses and evaluation of complex urban problems.

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

General Education Statement: This course fulfills a Quantitative Literacy General Education requirement

Course Requirements: Students are expected to attend all class periods, submit homework assignments when due, complete all learning enhancers and the midterm and final. The student will also analyze a research article. Student success is enhanced by keeping up to date with *required* readings. ***The book for this class is used with the course.* Learning statistics without a book is difficult at best.** You are required to turn in 2 questions regarding chapters 3, 4, 5, 7, & 8 that we cover in the class. A copy of the

text will be on reserve in the library. You can use it in the library for 2 hours at a time. *Class attendance* is also critical to the student being successful. Students are also strongly encouraged to make use of the .pdfs found on Blackboard that walk you through calculations of the formulae. When PowerPoint is used in class, there will be a corresponding .pdf file for your use. 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 going to <u>Blackboard LEARN</u>. The login web address is https://bblearn.csuohio.edu/MACAuth/login.jsp

The most common problem that students have with Blackboard is the result of not allowing "pop-ups" from the Blackboard site. You will need to do this to view any of the documents on the site.

Course Method: This class is designed to provide the student with a number of ***tools that can be used for self-assessment.*** *The* **reading questions** are designed to assist (encourage... *strongly encourage*) students to read the chapters in their book and to clarify areas that are confusing or unclear to them before we cover the material in class. These questions will allow you clarify questions that arise as you read through the material before class. *The* **homework** is a means to assist the student in determining what out of the lectures they might not have understood, as well as to provide additional practice in some of the calculations and interpretations. Homework assignments are found on Blackboard in the folder marked "Homework". *The* **group assignments** provide the student the means to work as a group in solving questions that build on the homework and also reflect what will appear on the learning enhancers, midterm and final. These assignments will be done in class. ***All*** *tests (learning enhancers, midterm and final) are taken using 2 pages of student prepared notes.* **The learning enhancers** allow the student to determine if their notes are adequate to assist them in solving the problems before they take their midterm and final. The learning enhancers are tests that cover a small amount of the material that you will see on the midterm or the final. These allow the student to apply what they have learned in the class and to see what areas they may not have developed proficiency in. They also assist the instructor in determining what material might need to be reviewed to clarify areas of confusion before the midterm or the final is taken. Each enhancer only counts for 5% of your grade (5 points out of the 100). This means you can do poorly on the enhancer and not undermine your grade in the class. You will also have a **midterm and a final** for this course. These will cover the same material that you have answered on the enhancers. This will allow you to correct any confusion you might have as to calculation etc. before taking them. The a**rticle review** allows the student to see how a research project is designed and how quantitative statistical tests are used to answer research questions.

I fully understand that statistics can be confusing to students and sometimes questions arise during a lecture that students are hesitant to ask. The question that is not asked is usually the one you really need an answer for. Because of this, I require you to submit 2 **reading questions** for Chapters 3, 4, 5, 7 and 8. READ the chapter. Use these questions to allow for me to explain more fully the material that you might be having difficulty understanding. If you understand the material completely, submit that to me as well in lieu of the questions. However, if you say you understand the material, then be sure that you do and can answer questions about it.

Grading Policy: Grades are based on the results of homework, learning enhancers, group assignments, project, midterm, final and class participation. The grade will consist of the following;

Attendance	10%
Reading questions	5%
Group Assignments	10%
Homework	10%
Article review	10%
4 learning enhancers	20% (5% each)
Midterm	15%
Final	20%

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

Grading scale: 94- 100 A 93-90 A- 89-87 B+ 86-83 B 82-80 B- 79-77 C+
76-70 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.*

The four learning enhancers and the midterm and final will be given as noted in the syllabus. Homework is assigned for each chapter the class after we complete the chapter in lecture. The instructor will give you the due date once the chapter lecture is complete.

A special note on homework. You ignore homework at your peril. If you choose not to submit your homework, you will lose a total of 10 points off of your final grade. Students have found that the homework points can mean the difference between a passing grade in the class versus one that they prefer not to have. Homework due dates are assigned after we complete the chapter in lecture. Once the Chapter is done, I will announce the due date. *I will accept late homework for a chapter up to the date of the learning enhancer that covers that chapter through Chapter 13. Final dates for the remaining chapters will be announced in class. NO homework will be accepted at the final! (Absolutely, positively, don't even think about it!)* Homework is graded. **PLEASE! Be neat. You will not receive credit for answers that we cannot read or that are ambiguous.**

COURTESY COUNTS! The use of cell phones for texting or laptops for web surfing and game playing during class lectures is disturbing to those around you and is not conducive to learning the material. The following requirements will be in effect for this class to minimize those distractions to other students.

1. *Cell phones and pagers are to be turned off or set to vibrate during the class session. Texting should be reserved for non-class times. If you have a need*

to speak with someone or to text them, please leave the classroom. <u>Cell phones and pagers are not to be on your desk during class time.</u>

2. ***Laptops are acceptable <u>for note taking ONLY!</u> Anyone using a laptop must sit in the last row of the classroom. If you use a laptop for notes, you must send me a copy of your class notes after each class. Please email them to w.weizer@csuohio.edu***

If the above requirements are not followed, cell phones, pagers and laptops will not be allowed in the classroom.

I have placed videos that cover the material at the following site. Please use these to review material that you find confusing or that you need additional guidance on. These do NOT take the place of class, they are meant to be a supplement to the course material. http://mediasite.ulib.csuohio.edu/Mediasite/Catalog/Full/e4548d9316414567b3ba717f2643c87621

Please Note: I am in the process of revising and updating some of the videos since we have changed the book this semester. The videos may not match by chapter but the content is still relevant and they can be used. I will notify the class when the updating is done.

Text: Bowen, Chieh-Chen. *Straightforward Statistics*. (2016) Thousand Oaks, CA. SAGE

Class Schedule and Readings

August 28 to September 1: Course introduction, Introduction to Statistics
  Read: Chapter 1 and 2
  September 1: Last day to join a course waitlist or drop with a full refund
  September 3: Last day to add (CampusNet Registration)

September 4 to September 8: Summarizing and Organizing Data, Group Project 1
  Read: Chapter 3
  September 4- Labor Day – no class
  September 8 Last day to drop
  September 9 Course withdrawal period begins – 'W" grade assigned

September 11 to September 15: Descriptive Statistics Group Project 2, Learning Enhancer 1 review
  Read Chapter 4
  September 13: Chapter 3 <u>READING</u> questions are due

September 18 to September 22: Learning Enhancer 1 – *covers Chapter 1 through 3 (Last day for Homework for chapter 1 to 3)*, Standard Z Scores, Begin Basic Principles of Probability
Read Chapter 5
September 22: Learning Enhancer 1
September 18: Chapter 4 READING questions are due

September 25 to September 29: Finish Basic Principles of Probability, Group Project 3, Review for Learning Enhancer 2
Read Chapter 6
September 25: Chapter 5 READING questions are due

October 2 to October 6: Learning Enhancer 2 – *covers Chapters 4 and 5 (Last day for Homework for chapter 4 and 5)*, Central Limit Theorem, Begin Hypothesis Testing
Read: Chapter 7
October 2: Learning Enhancer 2

October 9 to October 13: Hypothesis Testing, Begin One Sample t Test When α is unknown, Midterm Review
October 10: Columbus Day – Only Tuesday classes are affected
Read: Chapter 8
OCTOBER 9: Chapter 7 READING questions are due

October 16 to October 20: Group Project 4, Midterm (Covers Chapters 1 – 5) Finish One Sample t Test When α is unknown (Hypothesis tests and Confidence intervals)
OCTOBER 16: Chapter 8 READING questions are due
October 18: Midterm
Read Chapter 11

October 23 to October 27: Group Project 5, Correlation, Review for Learning Enhancer 3 (covers chapters 6 to 8), Group project 6
October 23: Article review paper is due
Read: Chapter 12

October 30 to November 3: Learning Enhancer 3 (Covers Chapter 6 to 8, Last day for homework from Chapter 6 to 8), Simple Regression
November 3: Learning Enhancer 3
November 3: Last day to withdraw from classes

November 6 to November 10: Group Project 7, Group Project 7
Read Chapter 13
November 10: Veteran's Day, no class

November 13 to November 17 : One Way Analysis of Variance
Read Chapter 14

November 20 to November 24: Chi Square Tests for Goodness of Fit and Independence, Group Project 8, Review for Learning Enhancer 4
November 23 to 26: Thanksgiving Recess, *Note: class will be held on 22nd*

November 27 to December 1: Learning Enhancer #4 (Covers Chapter 11, 12, 13, 14)
November 27: **Learning Enhancer 4 (Last day to submit homework for Chapters 7 and 10)**

December 4 to December 8: Final Thoughts

Monday, December 11th—12:30-2:30 p.m.: Final

Change in schedule/requirements: This syllabus is a *guide* to the semester schedule and its requirements*. The instructor reserves the right to change this syllabus and any of its contents at any time during the course by notifying students verbally, by written addendum or by announcements through Blackboard.*

Note: Students are strongly encouraged to email the Instructor with questions or problems they may be having. I am on campus most days of the week. I check my email on a daily basis even when I am not on campus. Many questions can be resolved if you email me. I am happy to respond.

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/index.html

University Policies
Students should refer to the Undergraduate Bulletin for procedures regarding add/drop and withdrawals and any other policies that may apply.

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.

Test taking/academic challenges: The University counseling center provides Academic counseling for students. Workshops are run throughout the semester to assist you in maximizing your note taking skills, test taking skill, assisting with test anxiety reduction, and managing time. The links below will take you to the Fall schedule which should be posted during the first week of classes.

http://www.csuohio.edu/counselingcenter/academic-skills-development-workshops-0

Workshops on improving academic success are also offered through the Tutoring Center as well as tutoring for some specific course content. Information on the Tutoring Center can be found at

http://www.csuohio.edu/academic/advising/tutoring/

Homework - Assignments are posted on Blackboard.