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 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. 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 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
If you have not worked with Blackboard before, please be sure to run “browser check” that is shown to the right of the log-in block. 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.

**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:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance</td>
<td>10%</td>
</tr>
<tr>
<td>Group Assignments</td>
<td>13%</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Project</td>
<td>10%</td>
</tr>
<tr>
<td>4 learning enhancers</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm</td>
<td>15%</td>
</tr>
<tr>
<td>Final</td>
<td>22%</td>
</tr>
</tbody>
</table>

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.


The four learning enhancers and the midterm and final will be given as noted in the syllabus. Homework questions due for each chapter are noted on the last sheet of this syllabus. Homework is due for each chapter the week after we complete the chapter in lecture. **The instructor will not accept homework for the chapter after the learning enhancer that covers that chapter is given!** DO NOT ignore homework. Students will find that their final grade will drop substantially when it is not turned in – and on time!

**Class Schedule and Readings**

- **January 18 to 24:** Course introduction, Data
  - **Read:** Chapter 1 through 4
  - **January 23** Last day to add (by 8:00 p.m.).
January 25 to January 31: Displaying and Describing Categorical Data, Start
Displaying Quantitative Data
Read: Chapter 5
January 29  Last day to drop

February 1 to February 7: Group Project 1, Displaying Quantitative Data,
Understanding and Comparing Distributions
Read: Chapter 6

February 8 to February 14: Group Project 2, Review for Learning Enhancer 1
Standard Deviation as a Ruler and Normal Model,
Read: Chapter 7

February 15 to February 21: Learning Enhancer One – covers Chapter 1 through
5 (Last day for Homework for chapter 1 to 5) Scatterplots, Association and
Correlation,
Read: Chapter 8 and 9
February 15th President’s Day NO CLASS

February 22 to February 28: Linear Regression, Regression Wisdom
Read: Chapter 11

March 1 to March 7: Group Project 3, Review for Learning Enhancer 2,
Understanding Randomness
Read: Chapter 14 and 15

March 8 to March 14: Learning Enhancer Two - covers Chapters 6 to 9(last day
for homework for chapter 6 to 9) From Randomness to Probability,
Probability Rules! Midterm Review
Read: Chapter 17 and 18

March 15 to 21 Spring Break

March 22 to March 28: Midterm, (covers Chapters 1 -9) Probability Models,
Sampling Distribution Models,
Read: Chapter 19

March 29 to April 4: Project 4, Review for Learning Enhancer 3 covers chapters
14 to 18, Confidence Intervals for Proportions
Read: Chapter 20 and 21
April 2: Last day to drop

April 5 to April 11: Learning Enhancer 3, (last day to submit homework for
chapters 14 to 18), Testing Hypothesis About Proportions More About
Tests
Read: Chapter 23
April 12 to April 18: Inferences About Means, Group project 5  
*April 14: Project Paper DUE*
Read: Chapter 26

April 19 to April 25: Review for Learning Enhancer #4 Covers Chapter 19 to 23  
Comparing Counts
Read: Chapter 28

April 26 to May 2: Learning Enhancer #4 (last day for submitting homework for chapters 19 to 23), Analysis of Variance,

May 3 to May 9: Final thoughts
*HOMEWORK FOR CHAPTERS 26 and 28 must be turned in by May 9th for credit.*

Wednesday May 12th—8:30-10:30 a.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.*

*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.*

**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](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**
Students with special needs (physical handicaps, learning disabilities, English as a second language) should identify themselves so that the appropriate arrangements can be made. The Office of Disability Services provides additional assistance for those students who have special needs. Further information about services provided can be found online at [http://www.csuohio.edu/offices/disability/](http://www.csuohio.edu/offices/disability/) Students can contact the office at 687-2015.
**Homework:** Homework is to be turned in the next class held after we complete the chapter. Homework is graded. **PLEASE! Be neat. You will not receive credit for answers that we cannot read or that are ambiguous.**

- **Chapter 2 - Page 15 – 18** Do 2, 4, 12, 14
- **Chapter 3 - Page 37 – 45** Do 2, 6, 8, 18
- **Chapter 4 - Page 71 – 78** Do 6, 12, 14 (use calculator) 18, 22
- **Chapter 5 – Pages 99 – 110** Do 4, 6, 18, 26
- **Chapter 6 - Pages 134 – 140** Do 2, 4, 8, 18, 30, 32
- **Chapter 7 - Pages 174 – 181** Do 2, 4, 8, 12, 14
- **Chapter 8 - Pages 204 – 212** Do 2, 4, 6, 10, 16
- **Chapter 9 - Pages 231 – 237** Do 2, 6, 10, 12
- **Chapter 11 - Pages 283 – 286** Do 2, 4, 6, 8, 12
- **Chapter 14 - Pages 361 – 365** Do 2, 4, 6, 14, 16
- **Chapter 15 - Pages 385 – 389** Do 2, 4, 8, 10, 20
- **Chapter 16 - Pages 405 – 408** Do 2, 4, 28
- **Chapter 17 – Pages 423 – 427** Do 2, 4, 8, 14
- **Chapter 18 - Pages 456 – 459** Do 2, 4, 10, 14
- **Chapter 19 - Pages 476 – 480** Do 2, 4, 10, 12, 16
- **Chapter 20 - Pages 498 – 501** Do 2, 4, 6, 10 ,14
- **Chapter 21 - Pages 522 – 525** Do 2, 4, 6
- **Chapter 23 - Pages 574 – 579** Do 2, 4, 6, 10, 14, 22
- **Chapter 26 - Pages 654 – 660** Do 2, 4, 6, 10, 14, 16