STATISTICS 212
Introduction to Statistical Methods

Instructor: Cameron Sweet
Office: Neill 318
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Office Hours: Monday-Friday: 10:00am – 10:30am, 11:30am – noon or by appointment

Labs:

<table>
<thead>
<tr>
<th>Section</th>
<th>Time</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>WED 12:00pm-4:00pm</td>
<td>NEILL 120</td>
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<tr>
<td>2</td>
<td>TUES 12:00pm-4:00pm</td>
<td>NEILL 120</td>
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</tbody>
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Web Address: http://www.math.wsu.edu/students/csweet/welcome.html


Course Description: The course will cover various aspects of statistics. These include data collection, data summarization, exploratory data analysis and some inferential techniques.

Course features: Problem solving, critical thinking, wide selection of real world problems, historical perspective, writing assignments and comprehensive computer use.

Exams (Tests/Final): There will be two mid-term exams and a comprehensive final this semester. If you must miss an exam, contact me in advance; DO NOT EXPECT MAKE-UP EXAMS. The exam dates will be announced at least two weeks in advance. All exams will be closed book, closed notes. Formula sheets will be allowed.

Homework and Lab Assignments: Homework will be assigned throughout the semester. You are expected to attend and complete the required lab assignments. All homework and lab assignments should be STAPLED and answers to problems highlighted or underlined. NO LATE WORK will be accepted. One homework assignment and one lab assignment will be dropped. If you have difficulty with homework or lab work, the TA or I will be more than happy to work with you.

Grading: 2 MIDTERM EXAMS 40% (20+20)
FINAL EXAM (Comprehensive) 25%
LAB ASSIGNMENTS (Attendance required) 20%
HOMEWORK 15%

A (93%-100%); A- (90%-93%); B+ (87%-90%); B (83%-87%)
B- (80%-83%); C+ (77%-80%); C (73%-77%); C- (70%-73%)
D+ (66%-70%); D (60%-66%); F(0%-60%)

You can keep track of your grades on angel (http://angel.wsu.edu/). If a mistake occurs in entering one of your grades, you must let your TA know no later than two weeks after the entering of the grade.

Attendance: You are expected to attend class regularly and to arrive on time. If you miss class, it is your responsibility to find out assignments, notes, etc. Absence due to a conference, field trip or athletic team meet will have to be notified in writing, in advance to the instructor.

Honor Code: You are expected to follow the code of conduct that befits a WSU student. Using unfair means for assignments or exams will be referred to the Office of Student affairs.

Disability Accommodation Policy:
Students with Disabilities: Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center (Washington Building 217; 509-335-3417) to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center.
Some Comments:
1. Bring a calculator to class EVERYDAY. You will need it for your in-class assignments.
2. Bring a disk to LAB. You will need it to store data.
3. Bring your class notes to the LAB. You will need formulae and information discussed in class for the LAB.
4. Come prepared to the classes and LAB.
5. If you are having difficulty with material in class, come and talk to me as soon as possible. I will be more than happy to work with you.
6. Do not hesitate to ask questions in class.
7. For your notebook, I suggest using a three-ring binder as opposed to a spiral notebook.
8. Come to class and participate.
9. Do not talk with a neighbor while I am lecturing.
10. If you will have to leave class early, please sit in the back close to the door.
11. Do not work on material for another class while I am lecturing.

The following is a projected schedule for topics in this class. It is a tentative schedule and is liable to change.

Tentative Schedule of topics:

Week 1-3: Introduction
- Data Collection (experiments, observational studies, and sample surveys)
- Concepts of population, sample, variable
- Graphical representation of data,
- Mean, Median, Mode
- Variance, Range, Standard Deviation
- Correlation and Regression

Probability
- Event, Sample Space, Experiment,
- Rules of Probability
- Normal Distribution
- Sampling Distribution of Sample Mean, Central Limit Theorem

Exam 1 Thursday, June 27

Week 3-6: Inference for \( \mu \) (population mean) and \( \pi \) (population proportion)
- Interval estimation of \( \mu \), \( \pi \)
- Sample Size estimation for estimating \( \mu \)
- Hypothesis Test for \( \mu \), p-values
- Power Calculations
- t-distribution
- Inference for \( \mu_1 - \mu_2 \)
  - Using independent samples (Pooled t test)
  - Using Dependent samples (Paired t test)

Exam 2 Thursday, July 18

Week 7-8: Categorical Data - Inference for Categorical Data
- Hypothesis Test for \( \pi \)
- Hypothesis Test for \( \pi_1 - \pi_2 \)
- Chi-Square Goodness of Fit Test, Chi-Square Test of Independence
- Analysis of Variance, Review for Final

FINAL EXAM Friday, July 26