ASU COURSE CATALOG DESCRIPTION: Concepts and methods of statistics, display and summary of data, interval estimation, hypothesis testing, correlation, regression. Applications to biological sciences.

Prerequisites: Students of STP 231 are expected to complete MAT 142 (College Mathematics) or MAT 117 (College Algebra) with a grade of A, B or C


Technology: An appropriate calculator is the only form of technology allowed in the classroom. The use of laptops, cell phones, MP3, IPOD, etc are strictly prohibited during class.

Calculator: A scientific calculator may be used for this course. The TI-83/84 or Casio 9850GB Plus calculator is recommended for most first year math courses at ASU. Calculators that perform algebraic steps, like the Casio FX2, Casio 9970 G, TI-89 nSpire CAS, and the TI-92, are not permitted! Practice with a calculator that you will be able to use during the exams.

COURSE CONCEPTS:

- Frequency Distribution
- Descriptive Measures of Center and Spread
- Mean, Median, Mode, Standard Deviation, Variance, Inter-Quartile Range, 5-Number Summary, Boxplots
- Random Sampling
- Probability Rules
- Binomial Distributions
- Normal Distributions
- Sampling Distributions of Proportions and Means
- Confidence Intervals for Means and Proportions
- Two Population Hypothesis tests and Confidence Intervals for Means-Paired and Independent Data
- Statistical Principles of Design
- Chi-square tests for Categorical Data-Goodness of Fit test and Contingency Tables
- Regression, Correlation, Coefficient of Determination

I reserve the right to alter this information at any time. These changes will be announced in class or on my web page.
<table>
<thead>
<tr>
<th>No.</th>
<th>Week</th>
<th>Sections Covered (Tentative)</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 1   | Jan. 9 – Jan. 13 | Intro, 1.1: Statistics and Life Sciences  
1.2: Types of Evidence  
1.3: Random Sampling                                      |                                 |
| 2   | Jan. 16 – Jan. 20 | 2.1: Introduction  
2.2: Frequency Distributions  
2.3: Descriptive Measures-Measures of Center                         | MLK Day Holiday (9/16)         |
| 3   | Jan. 23 – Jan. 27 | 2.4: Box Plots  
2.5: Relationships between Variables  
2.6: Measures of Dispersion                      |                                 |
| 4   | Jan. 30 – Feb. 3 | 2.7: Effect of Transformations of Variables  
2.8: Samples and Population-Statistical Inference  
2.9: Perspective and Summary  
3.1: Probability and Life Sciences  
3.2: Introduction to Probability                         |                                 |
| 5   | Feb. 6 – Feb. 10 | 3.2: Introduction to Probability  
Review for Test 1  
Test 1                                                       | Exam 1 (Tentatively)            |
3.4: Density Curves  
3.5: Random Variables  
3.6: Binomial Distribution  
4.1: Normal Distribution Introduction                      | Academic Status Reports 1 (2/13-2/20) |
| 7   | Feb. 20 – Feb. 24 | 4.2: Normal Curves  
4.3: Areas Under a Normal Curve  
4.4: Assessing Normality                                   |                                 |
| 8   | Feb. 27 – Mar. 3 | 5.1: Sampling Distribution  
5.2: Sample Mean  
5.3: Central Limit Theorem                                 |                                 |
| 9   | Mar. 6 – Mar. 10 |                                                                                             | Spring Break (3/6-3/10)         |
| 10  | Mar. 13 – Mar. 17 | 6.1: Statistical Estimation  
6.2: Standard Error of the Mean  
6.3: Confidence Interval for µ  
Review for Test 2  
Test 2                                                      | Exam 2 (Tentatively)            |
| 11  | Mar. 20 – Mar. 24 | 6.4: Planning a Study to Estimate µ  
6.6: Computing Two Means  
6.7: Confidence Interval for µ₁- µ₂                              | Academic Status Reports 2 (3/23-3/30) |
| 12  | Mar. 27 – Mar. 31 | 7.1: Hypothesis Testing: The Randomization Test  
7.2: Hypothesis Testing: The t-Test  
7.3: Further Discussions of the t-Test  
7.5: One Tailed Test                                         | Course Withdrawal Deadline (4/2) |
### Attendance:
- Attendance will be taken on a regular basis as studies have shown that students who attend class regularly are more likely to complete their courses successfully.
- For classes that meet three days a week (MWF, for example), the maximum number of allowed absences is six (6). For classes that meet two days a week (TTh for example), the maximum number is four (4).
- **Students who exceed the maximum number of absences will receive a grade of E.**

### Class Expectations
- Come to class on time daily with notes and a calculator
- Ask questions or come to office hours if you'd like further explanation or examples
- Review your notes daily to prepare for quizzes and upcoming tests
- Read the text in advance to prepare for the next day's new material
- Leave cell phones, mp3 players, and other electronics off and put away while in the classroom

### Homework, Quizzes & Projects:
Students are expected to read relevant sections of the textbook prior to attending class. Written homework, quizzes, and projects will be graded. Students may work together on homework, but each individual student is required to submit their own work. Homework will be collected in class at the beginning of the class period, due dates will be given in class, and are on posted on my web page. **Late assignments will not be accepted.** Quizzes and projects are given at the discretion of the instructor and frequently reflect material that has recently been discussed in class. To encourage attendance, instructors **will not give makeup quizzes or projects.**

### Studying and Preparation Time:
The course requires you to spend time preparing and completing assignments. A three-credit course requires at least 135 hours of student work over the 15 week semester. For a fifteen week course, expect to spend approximately a minimum of 9 hours a week preparing for and actively participating in this course.

### Midterm Exams:
You will take three exams during the semester. Each will involve a mix of mechanical skills and conceptual reasoning. The best possible preparation for them is regular attendance and completion of assigned homework. These exams are taken in class during class time. **It is your responsibility to make sure that you take the exam on the exam date. “Forgetting” the dates of the exam, or arriving late are NOT acceptable excuses to miss an exam.**
No test grade will be dropped from your grade record. Any student who accesses a phone or any internet-capable device during an exam for any reason automatically receives a score of zero on the exam. All such devices must be turned off and put away and made inaccessible during the exam.

Final Exam: The final exam will be according to the final exam schedule.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Dates</th>
<th>Material Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>Friday 2/10 for (MWF classes) and Thursday, 2/9 for (T/Th classes)</td>
<td>Chapters 1 - 2</td>
</tr>
<tr>
<td>Exam 2</td>
<td>Friday 3/17 for (MWF classes) and Thursday, 3/16 for (T/Th classes)</td>
<td>Chapters 3 - 5</td>
</tr>
<tr>
<td>Exam 3</td>
<td>Wednesday 4/12 for (MWF classes) and Thursday, 4/13 for (T/Th classes)</td>
<td>Chapters 6 - 8</td>
</tr>
<tr>
<td>Exam 4</td>
<td>According to the ASU Final Exam Schedule</td>
<td>See my website</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chapter 9, 10, 12</td>
</tr>
</tbody>
</table>

Grading Criteria: Final Exam

<table>
<thead>
<tr>
<th>Percentage Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams 1, 2, 3, and the Final Exam</td>
</tr>
<tr>
<td>Homework and Quiz Averages</td>
</tr>
</tbody>
</table>

Grading Scale:
A  90-100%
B  80-89.9%
C  70-79.9%
D  60-69.9%
E  0-59.9%

Disabilities: If you have any disability that may hinder your performance, please notify your instructor as soon as possible.

Tutoring: The Math Tutor Center is located in PSA-116. You must have a valid ASU "Sun Card" in order to be admitted.

Extra credit: If you come to class and do the homework, your grade will take care of itself. Any opportunity for extra credit will be offered to the class as a whole, usually as part of a test or exam. No individual requests for extra credit projects will be considered.

The instructor reserves the right to make changes to this syllabus as necessary. Changes will be considered official if they are announced in class, placed on my web site or sent to you via e-mail to your officially assigned ASU e-mail address.
Course Withdrawal: A student may withdraw from a course with a grade of W during the withdrawal period. The instructor’s signature is not required. It is a student’s responsibility to verify that they have in fact withdrawn from a class.

Instructor-Initiated Drop: At the instructor’s discretion, any student who has not attended class during the first week of classes may be administratively dropped from the course. However, students should be aware that non-attendance will NOT automatically result in their being dropped from the course. Thus, a student should not assume they are no longer registered for a course simply because they did not attend class during the first week. It is the student's responsibility to be aware of their registration status.

The grade of Incomplete: A grade of incomplete will be awarded only in the event that a documented emergency or illness prevents the student who is doing acceptable work from completing a small percentage of the course requirements. The student must provide written documentation and be passing the class at the time to receive an Incomplete. Make-up final exams will NOT be given for reasons of a non-refundable airline tickets, vacation plans, work schedules, weddings, family reunions, and other such activities. Students should consult the final exam schedule before making end-of-semester travel plans. The guidelines in the current general ASU catalog regarding a grade of incomplete will be strictly followed. The Dean of the student’s college must approve any exceptions to these rules.

Final Exam Make-up Policy: The final exam schedule listed in the Schedule of Classes (http://students.asu.edu/final-exam-schedule#spring) will be strictly followed. Except to resolve those situations described below, no changes may be made in this schedule without prior approval of the Dean of the college in which the course is offered. Under this schedule, if a conflict occurs, or a student has more than three exams on one day, the instructors may be consulted about an individual schedule adjustment necessary, the matter may be pursued further with the appropriate dean(s). This procedure applies to conflicts among any combination of Downtown Phoenix campus, Tempe campus, Polytechnic campus, West campus, and/or off campus class.

Make-up final exams will NOT be given for reasons of a non-refundable airline tickets, vacation plans, work schedules, weddings, family reunions, and other such activities. Students should consult the final exam schedule before making end-of-semester travel plans.

Disability Accommodations: Please schedule an appointment to see your instructor or come by during office hours if you have a disability that will require accommodations in this class. Note: To qualify for disability accommodations at ASU, students must qualify for services through the Disability Resource Center (DRC), which is located on the first floor of the Matthews Center Building at 480-965-1234 (voice) or 480-965-9000 (TTY). Please complete this process as soon as possible.

Honor Policy: The highest standards of academic integrity are expected of all students. The failure of any student to meet these standards may result in suspension or expulsion from the University or other sanctions as specified in the University Student Academic Integrity Policy. Violations of academic integrity include, but are not limited to, cheating, fabrication, tampering, plagiarism, or facilitating such activities.

The grade of XE: A grade of XE is reserved for "failure for academic dishonesty." The XE grade may be petitioned after 1 year.

Ethics: It's highly unethical to bring to your instructor's attention the possible impact of your mathematics grade on your future plans, including graduation, scholarships, jobs, etc. For the university's complete policy regarding ethics, including cheating,
plagiarism and other forms of academic dishonesty, see the Student Academic Integrity Policy at the following web address:
http://provost.asu.edu/academicintegrity

**Student Conduct Statement:** Students are required to adhere to the behavior standards of the Arizona Board of Regents Policy Manual [Code of Conduct](#), Academic Affairs Manual ACD 125 [Computer, Internet, and Electronic Communications](#), and the ASU Student [Academic Integrity Policy](#). Students are entitled to receive instruction free from interference by other members of the class. If a student is disruptive, an instructor may ask the student to stop the disruptive behavior and warn the student that such disruptive behavior can result in withdrawal from the course. An instructor may withdraw a student from a course when the student’s behavior disrupts the educational process according to procedures of the Student Services Manual [SSM 201-10](#).