Overview  We develop the foundation of probability and the statistical methods that depend on probability from first principles—that is, with no assumed background in these topics.

We seek mathematically-precise theory to guide us, though always motivated by real-world statistical applications and sometimes augmented by computer simulations of probability laws and computer solutions for statistical applications that involve large data sets.

Class  1:30–2:20 MWThF in 105 EPB    Prerequisite: Calculus II or equivalent

Instructor  Blake Whitten  Office: 260 Schaeffer Hall  (319) 335-0647  blake-whitten@uiowa.edu

Office Hours: Monday & Thursday 2:30 – 4:00 PM

Required Course Materials (Bring to class each day)

• **Textbook:** A Brief Course in Mathematical Statistics by Tanis and Hogg, 2008, Pearson.
  - ISBN-10: 0131751395
  - Available: UI Bookstore (Hawk Shop), Iowa Book & Supply, Amazon.com

• **Three-Ring Binder** — Strongly recommended for great organization to collect notes, handouts, homework, quiz and exam papers, etc. (Final exam is comprehensive.)

• **Calculator:** (Cell phones slow us down in class, cannot be used on quizzes, and are not an acceptable substitute.)
  Any calculator is acceptable if it can produce one-variable statistics (sample mean and standard deviation) and two-variable statistics (correlation and regression) from sets of numbers input as raw data.
  - The Calculator Help link from ICON supports the following models:
    - TI-83, TI-84, TI-89 Titanium, TI-30X II S, TI-BA II Plus, Casio FX-300 MS Plus, HP-50g.
    - Many other calculators work great too! Just google your calculator’s directions for tools such as memory buttons, permutations, combinations, standard deviation, correlation, and regression.
    - The TI-83, TI-84 and TI-89 are graphing calculators but graphing capability is not necessary. Many Casio and other TI calculators work fine and are less expensive.

• **Computer Software:** We may (or may not) use programs such as MINITAB and R this semester. But if we do, those are available at no charge from the university’s Virtual Desktop.
Course Features

**Study Teams**

- Students form teams for study support. Rely on team members for help—for instance with challenging homework problems or to get notes from a class that you miss due to illness or emergency. If some team members are busy, others can attend office hours and report back.

- Teams submit a written homework assignment each week.
  - In team HW writeups, it’s important to follow style guidelines (described below) closely so that the grader understands your answers clearly. Homework is graded both on the correctness of answers and communication style.
  - Since quizzes are individual assessments, it’s important to squeeze the most from each homework. I recommend that team members work problems individually first, then meet as a team to thrash out differences and write up the team’s submission.
  - Don’t stress if you can’t figure out a HW question or if your team answers incorrectly! Just follow up before the next quiz or exam. 😊

**Homework**

1. Each study team submits a single (common) written homework paper for each assignment. (Please no electronic submissions. The grader will write comments to return to you.)

2. Team members earn a common score for each assignment.

3. Assignments are due at the beginning of class. (A 50% grading penalty applies to late papers.)

4. Team members may be asked to present their team’s HW solutions during class discussion.

5. Homework Guidelines:
   - Place a box around each final numerical answer.
   - Show all important steps in your reasoning. (You must convince the grader to earn credit.)
   - Homework should be neat and stapled, include names of all team members who contribute in the top right corner.

6. Only names of team members who actually contribute to a particular assignment should be included. (Grading credit is earned by those who contribute.)

**Attendance/Participation**

- This score is completely at Prof. Whitten’s discretion, but will lean heavily on on-time attendance and active class participation. (No cell phones please.) Sign the attendance clipboard each day when you arrive to class to earn attendance credit. Also mark if you arrive late. (Starting on time provides energy and helps the entire class.)
**Quizzes**

- Quizzes can cover anything (any previous or current HW assignment, anything discussed in class or in the textbook.)

- Quizzes are time-sensitive so in place of makeup quizzes and as an explicit allowance for necessary absence (university-sanctioned events, illness, family emergency, etc.) the lowest 2 quiz scores are dropped from the calculation of the course grade.

**Exams**

- Students must take exams as scheduled except in cases of officially university-approved absence such as class conflict with official exam time, illness, religious observance, and NCAA athletic competition.

- Makeup exams are not available for other reasons, including student org field trips, club competitions and personal events. In the case of university-approved absence, the final exam score substitutes for the missing midterm exam score.

**Course Grades**

- **Weights for Course Percentage:**
  
  8% Participation & Attendance  
  12% Homework (study teams)  
  25% Quiz  
  30% Midterm Exams (15% each, exam dates announced at least one week in advance)  
  25% Final Exam (comprehensive)  
  100%  

- **Calculate your Course Percentage:**

  1. Drop the two lowest Quiz scores. Then calculate Quiz Percent from remaining scores.

  2. Then calculate:

  \[
  \text{Course \%} = (0.08)(\text{Participation/Attendance}) + (0.12)(\text{Homework}) + (0.25)(\text{Quiz})  
  + (0.15)(\text{Midterm 1}) + (0.15)(\text{Midterm 2}) + (0.25)(\text{Final Exam})
  \]

- Course grades are earned according to the following minimum Course Percentage:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>92%</td>
</tr>
<tr>
<td>A−</td>
<td>90%</td>
</tr>
<tr>
<td>B+</td>
<td>88%</td>
</tr>
<tr>
<td>B</td>
<td>82%</td>
</tr>
<tr>
<td>B−</td>
<td>80%</td>
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<tr>
<td>C+</td>
<td>78%</td>
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<tr>
<td>C</td>
<td>72%</td>
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<tr>
<td>C−</td>
<td>70%</td>
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<tr>
<td>D+</td>
<td>68%</td>
</tr>
<tr>
<td>D</td>
<td>62%</td>
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<tr>
<td>D−</td>
<td>60%</td>
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<tr>
<td>F</td>
<td>Below 60%</td>
</tr>
</tbody>
</table>

For example, a course percentage of 87.9999% earns a grade of B in STAT 3120. Course grades are meaningful so all students earn grades on the same scale, without exception.
Administrative Notes

Honor Code  Course policies are governed by the College of Liberal Arts and Sciences. Cheating (academic misconduct) is unethical and unfairly punishes honest students. Cheating includes, but is not limited to, copying or communicating with other students during quizzes or exams, and unauthorized use of notes, computer files, or other study aids. All academic misconduct will receive the following sanctions:

1. A report is filed with the College. You will be placed on academic probation for 5 years, suspended, or expelled.
2. You will receive a 0 on the quiz/exam/homework on which the academic misconduct occurs.
3. You will not be able to drop the lowest 2 quiz scores (if misconduct occurs on a quiz.)
4. Your final course grade will be lowered by 2 full letter grades (e.g. from a B+ to a D+).

Disabilities  Please see me as soon as possible (after class or during office hours) if you have any disabilities for which alternative arrangements for lectures or exams should be made. Student Disability Services (located in Burge Hall) directs such arrangements at UI and also welcomes student inquiries.

Sexual Harassment  The College of Liberal Arts and Sciences and the University of Iowa are committed to providing students with an environment free from sexual harassment. If you feel that you are being or have been harassed or you are not sure what constitutes sexual harassment, visit the University website http://www.sexualharassment.uiowa.edu/index.php, to seek assistance from department chairs, the Dean’s Office, the University Ombuds Office, or the Office of Equal Opportunity and Diversity.

Department Chair  Joseph Lang, 241 Schaeffer Hall, 335-0712, joseph-lang@uiowa.edu