Stat 515 01 and 02 : Statistics I
Spring, 2016

Instructor: Zheng Wei
Office Hours: TuTh 11:15-12:30
LGRT 1344 or by appointment
email: wei@math.umass.edu

Lecture:
STAT 515.01: TuTh 10:00AM - 11:15AM
STAT 515.02: TuTh 8:30AM - 9:45AM
Lederle Grad Res. Ctr rm A201

Web Page: Course materials such as lecture notes and homework assignments will be posted on http://www.math.umass.edu/~wei/teaching.html

Required Text: Mathematical Statistics with Applications(7th Edition),
D. D. Wackerly, W. Mendenhall and R. L. Schaeffer

Prerequisites: Math 131-132 (univariate calculus covering both differentiation and integration for single variables). The necessary concepts for multiple integration or partial derivatives will be introduced in the course as needed.

Course Description:
This course provides a calculus based introduction to probability (an emphasis on probabilistic concepts used in statistical modeling) and the beginning of statistical inference (continued in Stat516). Coverage includes basic axioms of probability, sample spaces, counting rules, conditional probability, independence, random variables (and various associated discrete and continuous distributions), expectation, variance, covariance and correlation, the central limit theorem, and sampling distributions. Introduction to basic concepts of estimation (bias, standard error, etc.) and confidence intervals. We will cover much of chapters 2-7 in the text (with some omissions) and probably some portions of chapter 8.

Important dates:
First day of class: Jan 19th
Last day to drop without record: Feb 1st
First midterm exam: Feb 18th (tentative)
Last day to Drop with "W" and select 'P/F': Thursday March 3
Second midterm exam: Mar 29th (tentative)
Final exam: May 3rd, 1:00 – 3:00 pm at Marcus Hall room 131

Required Work: The required work for the course will consist of homework assignments, 5 in-class attendance quizzes, 2 in-class midterms and a final exam.
Homework

Some homework exercises will focus on elementary computations, algorithms, and definitions. Others will require more than just procedure, might connect two or more things together, may introduce topics tangential to the main lecture, be concerned with new applications. You are expected to express your ideas clearly, legibly and completely. The goal in class is to prepare you to do the homework and not necessarily to show how to do your homework. The learning occurs when you can move yourself into unknown territory.

Online homework assignments are given on [http://webwork2.math.umass.edu/webwork2/](http://webwork2.math.umass.edu/webwork2/). Please finish the “Orientation to WebWorK” assignment before the end of the first week. Username: your own SPIRE username; password: your own 8 digit UMass SPIRE ID number.

Written homework exercises must be written up on paper each week and turned in. Late homework will not be accepted. Unreadable work, scratching out, etc. will not be graded. Your work will be evaluated on the method of solution and the ability to apply concepts, rather than the numeric answer to the problem. As the numeric answers to some hw questions may be found at the end of the book, you will not receive credit unless you show your work.

By all means you may work in groups on the homework assignments. Collaboration is a big part of learning and of scholarship in general. However, each student must turn in his or her own write-up of the solutions, with an acknowledgment of collaborators.

Exams and quizzes

During the semester there will be two midterm exam in class and one final exam. The tentative date of the first midterm exam is February 18th. Five attendance quizzes (pop quiz) will be given in class. The final exam is cumulative. Essential formulas will be given in the exam.

You are responsible for taking the final exam at the time it is scheduled by the University. Do not make travel plans that may conflict with the final date before knowing when the exam is scheduled for.

I may approve out-of-sequence exams in the following cases:

1. A documented medical excuse;
2. A University sponsored event such as an athletic tournament, a play, or a musical performance. Athletic practices and rehearsals do not fall into this category. Please have your coach, conductor, or other faculty advisor contact me.
3. A religious holiday
4. Extreme hardship such as a family emergency (e.g., serious illness, injury, or death in the family)

Make-up exams will only be given for legitimate, documented reasons and with approval before the exam occurs. If you have a University-approved conflict with any of the exams, you must let me know at least one week before the exam. A conflict exam will be scheduled to take place just before or just after the regularly scheduled exam.

I will not accommodate out-of-sequence exams, quizzes or finals for purposes of more convenient travel, including already purchased tickets.
Attendance

Attendance to each class meeting is required and beneficial. Students are responsible for all announcements and supplements given within each lecture and/or via course email.

Grading: The final course grades will be based upon:
- Homework: 25 % = 10 % (Webwork) + 15 % (Written homework)
- Quiz: 10 %
- 1st Midterm: 20 %
- 2nd Midterm: 20 %
- Final: 20 %
- Performance: 5 % (Attendance, etc.)

[Note] If one does not take all five attendance quizzes, one might not get 5% performance scores.

The lower cut-off points for the grades are:

F  D  D+  C-  C  C+  B-  B  B+  A-  A
0  51  55  60  65  70  75  80  83  88  93

Any objections to the homework grading should be directed to the TA, as she will be responsible for grading the homework. Any objections to the midterm or final grading should be directed to the instructor in the form of a written request. The case should be made clearly regarding the basis of the objection. All requests will be considered by the instructor and the student will be notified if a grade change occurs.

Class etiquette statement

- Except for emergency, do not send text messages/emails or make/receive phone calls during lectures.
- If you arrive late to class, sit in the first seat you can find so as not to disturb others, and do not come up to the front of the room to pick up or hand in papers.
- You can use laptops and tablets during class provided that you do not disturb your fellow classmates or my lectures (for example: mute the speaker). They are not allowed during exams.
- Please read Guidelines for Classroom Civility and Respect: http://www.umass.edu/dean_students/campus-policies/classroom

Academic integrity statement

Since the integrity of the academic enterprise of any institution of higher education requires honesty in scholarship and research, academic honesty is required of all students at the University of Massachusetts Amherst. Academic dishonesty is prohibited in all programs of the University.
Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. Instructors should take reasonable steps to address academic misconduct. Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate department Head or Chair. Since students are expected to be familiar with this policy and the commonly accepted standards of academic integrity, ignorance of such standards is not normally sufficient evidence of lack of intent.

Please read Academic Honesty Policy and Procedures: http://www.umass.edu/ombuds/honesty.php/

Accommodation Statement

The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. A student with a documented physical, psychological, or learning disability on file with Disability Services (DS) may be eligible for reasonable academic accommodations to help succeed in this course. If you have a documented disability that requires an accommodation, please notify the instructor within the first two weeks of the semester so that we may make appropriate arrangements.