Course Description

MATH 155 is a one-semester, introductory statistics course intended for students in the social and natural sciences. Emphasis is placed on the proper use and interpretation of descriptive and inferential analysis of data, with careful attention paid to assumptions that underlie the data. Both traditional, parametric methods and some non-parametric methods will be introduced in the course.

Specific topics covered in the course include: basic descriptive statistics (histograms, mean, standard deviation, etc.); probability fundamentals (sample space, additive and multiplicative rules, independent events, etc.); discrete and continuous random variables; binomial and normal distributions; sampling distributions and the Central Limit Theorem; confidence intervals for, and hypothesis tests of, means and proportions with one or two populations; Student’s t-distributions; significance and p-values; sign and signed rank tests with one or two populations (Wilcoxon, Mann-Whitney).

The official Mathematics Department description and syllabus for MATH 155 can be found at http://www.salisbury.edu/mathcosc/courses/m155.pdf

Prerequisites

High school Algebra I and II and Plane Geometry. In particular, we assume that you’re familiar with notions such as variable, formula, equation, graphs of equations, and areas of plane regions.

Who Takes MATH 155 and Why?

Every undergraduate student must complete at least one mathematics course in order to graduate. Completion of MATH 155 satisfies this general education requirement. (Specifically, MATH 155 meets general education requirement IVB or IVC, which prior to Fall, 2008, were requirements IIIB and IIIC, respectively.)

Not every student has to (or should) take MATH 155 to satisfy the general education requirement. Other entry-level courses offered in the Department also meet these requirements, such as MATH 105 Liberal Arts Mathematics (previously MATH 190), MATH 144 Environmental Mathematics, and the Precalculus/College Algebra courses MATH 135 (previously MATH 100) and MATH 140. You may prefer a different course if your purpose is only to meet the general education requirement.

Some students, however, will be required to take MATH 155 either by their major or school. For example, students in the Perdue School are required to complete MATH 155 (in fact, with a grade of C or higher), as are majors in Social Work in the Seidel School. Be sure you know the requirements of your major and school.

Note. For students who have weaker backgrounds (perhaps as identified for freshmen in the incoming Math Assessment through ALEKS), or who have been away from math for a long time, consider contacting the Center for Student Achievement in the Guerreri University Center, Room 213, to learn about taking an on-line learning module sequence to increase your knowledge in some areas. It may be wise for some students in this situation to consider taking MATH 155 in a future semester, while working through the ALEKS modules this semester.

Note. Students who have received credit already for an introductory statistics course (which includes SU courses MATH 151 and MATH 213) cannot receive credit for MATH 155.

Required Textbook and Coverage

A First Course in Statistics - Tenth Edition, by James T. McClave and Terry Sincich, Pearson Education, is the required text for this course. We use a specially-extracted version of the text containing only Chapters 1 through 8; you can find it in the SU bookstore as ISBN: 978-0-53-609487-2 (used for about $90) or from a variety of sources on the internet. Alternatively, you can purchase the complete text of the same name (ISBN: 978-0-13-615259-0), and you’re likely to find it, whether new or used, at a much lower price than you’ll find at the SU bookstore.

The course will cover approximately the following content: Chapter 1 (all); Chapter 2 (sections 1 through 8); Chapter 3 (sections 1 through 6); Chapter 4 (all except section 7); Chapter 5 (all);
Chapter 6 (all); and Chapter 7 (sections 1 through 5). Other topics either from the text or from instructor-supplied notes will be added as time permits.

Optional Student Solutions Manual

Although not required, I highly recommend your having access to the Student Solutions Manual, whether it be yours individually or shared among several of you. It contains completely worked out solutions to all of the odd-numbered problems in the text and is available in the Bookstore as ISBN 978-0-13-604519-9 (used for about $28).

Calculator

A scientific or graphing calculator is required for the course. You’ll use it for exams, quizzes, and assignments, and you should have it with you in class every day. However, please note that

- Each student must have his or her own calculator and know how to use it;
- You may not use a calculator tool found on your cell phone, iPhone, tablet or Blackberry-like device; and
- Calculators can not be shared during exams.

I highly recommend the TI-83 or TI-84 graphing calculator, since each has a large number of statistical routines that can be used in class this semester (although this may not necessarily mean that the course will be easier for you by using one of these). I will use a TI-83 Plus in class – and for anyone continuing to other math classes such as MATH 135 (College Algebra) or MATH 160 (Calculus), the TI-83/84 is the calculator of choice in those classes.

Should you have a calculator other than a TI-83 or TI-84, you assume the full responsibility for knowing how to use it. Please also be sure that you have an owner’s manual for the calculator you use – many can be found on the web.

When and Where We Meet

Our class meets every Monday, Wednesday, and Friday between August 31 and December 9, with the only exceptions being Labor Day (September 5) and the Thanksgiving recess (November 23 and 25). We meet in Henson Hall room 111, with Section 008 gathering from 10:00 to 10:50 AM, and section 009 from 11:00 to 11:50 AM.

Note. Due to the Hurricane Irene delayed start to the semester, Saturday, December 10, is likely to be used as a make up day for the August 29 cancellation.

Your attendance is expected at these classes. If you miss a class, it is your responsibility to get notes from class from a fellow student and/or copies of any handouts either from the class website or from me at my office. In particular, it will be helpful to know the name of at least one other student in the class from whom you can get notes or comments.

Class Website

Blackboard is our official means of communication. You can log in to myclasses.salisbury.edu using your usual username and password. You’ll find a calendar of class coverage, a copy of this syllabus, a copy of class policies, info on your grades, and whatever else we can provide.

In particular, all ongoing class assignments will be listed at the website, and you are expected to learn of them by visiting the website.

Examinations and Quizzes

Examinations. The following are the dates for our four (4) in-class exams and the final exam:

- Exam #1: Friday, September 23
- Exam #2: Friday, October 14
- Exam #3: Friday, November 4
Exam #4: Wednesday, November 30

Final Exam (a two-hour, comprehensive exam conducted on-line in a computer lab):
- for Section 008 (10 AM): Friday, December 16, beginning at 10:45 AM
- for Section 009 (11 AM): Wednesday, December 14, beginning at 1:30 PM

Quizzes. Beginning Friday, September 9, we will have a 10- to 15-minute quiz, usually at the end of class, approximately every Friday when there is no examination scheduled. There will be a total of nine (9) quizzes this semester, planned for the following dates:
- Fridays Sep 9, Sep 16, Sep 30, Oct 7, Oct 21, Oct 28, Nov 11
- Monday Nov 21 and
- Wednesday Dec 7

The material for each quiz will be (unless announced otherwise) drawn from the content of the classes immediately preceding the quiz and recent entries on the list on ongoing assignments. It is possible that some of these quizzes will be (partially) replaced by using on-line assessments through the class website – more info on this later when it happens.

For in-class exams and quizzes, you should bring your calculator. No notes, books, or electronic devices other than your graphing calculator may be used during exams. I will supply any necessary numerical tables and reference sheets for formulas as needed for exams and quizzes.

Makeup Exams and Quizzes. There are no makeup exams or makeup quizzes, except for University approved absences. Please be sure to read the complete language of my policies regarding missed exams and quizzes in the Policies and Procedures document posted on the class website.

Assignments

Assignments (basically, lists of suggested problems to be working on) will be posted on the class website following almost every class. The material for quizzes and exams will be drawn from the material covered in these assignments.

It is not required that you write up or hand in any solutions. However, writing down what you do will help. Indeed, the best method of study is to work through most (if not all) of the exercises and write up solutions, perhaps keeping them in a notebook for reference. When you come to my office for help on a problem, please bring what you have written and we can work from there.

Feel free to form a study group of two of three students to work on the problems collectively and compare notes with others and with solutions available in the Student Solutions Manual.

Computer (Laboratory) Assignments

Several computer lab assignments will be given during the semester. You’ll be expected to visit one of the computer labs, carry out statistical procedures using Minitab statistical software, and then write up probably a one- to two-page report of the exercise that is mathematically accurate and details your work and conclusions in well written English.

More info on these will be announced as we go through the semester.

Semester Grading

- Each in-class examination will count 50 points.
- The best seven of your nine quiz results will collectively count 50 points.
- The cumulative, 2 hour final exam will count 80 points.
- The computer laboratory assignments will count 30 points.

Your final, letter grade will then be determined on a 360 point scale using these numbers as follows: add together the four in-class exam scores, the quiz total, the final exam score, and the computer lab assignment total.
Semester Grading Scale. I don’t establish absolute grade scales at the beginning of a semester. Doing so only forces examinations to be constructed in artificial ways and then possibly be rescaled after the fact so that the results match up appropriately with a fixed grade scale.

As a result, following every exam, I’ll tell you exactly where everyone stands on the grading scale and how the grades look to be going. I’ll be giving you very complete information on class performance. Based on my experiences with previous classes at all levels, it’s reasonable to believe that average scores will generally correspond to a grade of C. The only decision to be made after that is whether to consider an average score a high, middle, or low C and, once that’s determined, the rest of the scale generally sets itself.

When we reach the end of the semester, I can assure you that there will be very few surprises in the final, semester grades given, and that the grades issued to the class as a whole are not significantly different from those of other instructors in other MATH 155 classes this semester.

For reference: the last day to withdraw from the class is Friday, October 28. We’ll have completed two exams, five quizzes, and probably two lab assignments by then, so you’ll have enough information to know whether withdrawal (a grade of W) should be considered.

Please let me add one important comment about the semester grades that will ultimately be issued in this course. Your semester grade will be based primarily on your performance in this course, as measured by the testing instruments we use: i.e., examinations, quizzes, and laboratory reports. Please understand that your grade in this course will not be based on what many of you may believe is your effort, as measured perhaps by hours you spent studying or attending class, or hours you spent using computer statistics software and word-processing computer lab reports.

Let me emphasize: effort and performance are not the same; semester grades will be based primarily on performance.

Office Hours/Getting Help

Contact info:

- Professor G. E. Keough, Henson Science Building Room 132F
- website: http://faculty.salisbury.edu/~gekeough
- email: gekeough@salisbury.edu

Office hours (no appointment needed, just drop in):

- Monday: 9:00 – 9:45; 12:00 – 12:45 (limited availability); 3:00 – 3:45
- Wednesday: 9:00 – 9:45; 12:00 – 12:45 (limited availability); 3:00 – 3:45
- Friday: 9:00 – 9:45; 12:00 – 12:45 (limited availability); 3:00 and later if requested

I am available at other times on the three days above by appointment. I am usually not on campus on either of Tuesday or Thursday.

Free tutoring is available for this course from (approximately) Tuesday, September 6, until Friday, December 9. Consult the schedule posted at the Math Tutoring room (Henson 117) for hours of operation, or visit www.salisbury.edu/mathcosc/Tutor.