STA 3032 Engineering Statistics Spring 2020

Class No. 19738, Section 7370, LIT 101 MWF 7th period, 1:55–2:45pm

Instructor Deborah Burr, 116C Griffin-Floyd Hall (FLO); Office Hours: MWF 11:45am–12:35pm (5^{th} period), or by appointment; Email: burr@stat.ufl.edu (put "3032" in the subject line); Phone: 273-2973 (do not leave a message).

Teaching Assistants

Arek Kesiz-Abnousi, FLO 209; Office Hours: TBA; Email: arek.kesizabnous@ufl.edu

Somnath Bhadra, FLO 234; Office Hours: TBA; Email: somnath.bhadra@ufl.edu

Required Materials

Textbook William Navidi, *Statistics for Engineers and Scientists*, McGraw-Hill, 5th ed. Use of the e-learning platform *Connect* is required. Available through UF's All Access program for $\$80.00$, this includes an electronic version of the text.

Scientific calculator You need one which will compute the mean and standard deviation automatically. You will use it for tests. A graphing calculator is allowed.

Prerequisite MAC 2311 Analytic Geometry and Calculus I

Course Description This course stresses the "big picture" of statistics: It relates standard data summaries, such as the mean and standard deviation, to inferential methods for drawing conclusions from the data, via probability. Many common statistical methods are included, as well as others that have proved useful in engineering applications. Main topics include descriptive statistics, probability basics, discrete and continuous random variables, the sampling distribution of the mean (Central Limit Theorem), estimation, hypothesis testing, and linear regression.

Main Course Objectives (short list)

1. Be able to produce and interpret appropriate graphs and descriptive statistics for one variable (either categorical or quantitative).
2. Know and be able to apply the basic probability rules, the concepts of expected value and variance for discrete and continuous variables, and the binomial, Poisson, and normal distributions.
3. Know and be able to apply the Central Limit Theorem, which is crucial for inference.
4. Know the meaning of confidence intervals and hypothesis tests.
5. Be able to carry out and interpret one-sample analyses for making inference about population means and proportions.
6. Be able to carry out correlation and regression analyses, for two quantitative variables, and to correctly interpret such analyses.

Grading Your final course grade will depend on your course score based on the following four components with their respective weights:

Homework (Connect):		25%
Exam 1:	Monday February 10 (8:20–10:10pm, location TBA)	25%
Exam 2:	Thursday March 19 (8:20pm–10:10pm, location TBA)	25%
Exam 3:	Monday April 20 (8:20pm–10:10pm, location TBA)	25%

The assignment of letter grades will be determined as follows (cutoffs will be no stricter than indicated, and may be relaxed): A 93–100; A^- 90–92; B^+ 87–89; B 80–86; B^- 77–79; C^+ 74–76; C 67–73; D 50–66; $E < 50$

The calculation of your final average will be done outside of Canvas; the formula used by Canvas will not necessarily produce the final average according to the course grading scheme. Information on current UF policy for assigning grade points may be found at `https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx`.

Homework There will be regular homeworks done online through Connect. There are two types of Connect assignments: reading comprehension (from the SmartBook module in Connect), and problem-solving ("Connect HW").

SmartBook Assignments There are seven reading assignments, one for each of Chapters 1 to 7 in the text. They are interactive and individualized. It would be best to have begun each of these before the topic is discussed in class. You receive full credit for a SmartBook reading assignment if you complete it by the due date; these are worth 10 points each.

Connect HW There are ten problem-solving assignments taken from exercises in the textbook. The total number of possible points on these assignments is around 210.

Both types of online homework are graded automatically as you do them.

There will be no extensions to due date and time for homeworks. No late homework will be accepted.

For the two types of homework combined, there are 280 points possible. You need 250 points for a perfect homework score. Points over 250 will not count extra.

Exams There will be three exams. The exams will consist of multiple-choice questions, plus one or two "written" questions on each exam. These will be "unit tests." There will not be a cumulative final exam. The class day before each exam will be reserved for review for the test.

Course Policies

Homework Due dates and times for homework are stated on Canvas. No late homework will be accepted.

Exams The exams are closed-book, closed-notes. You may bring one 8.5 $\times$ 11 sheet of notes to each exam. Bring a picture ID, your calculator, pencils and erasers. Makeup exams must be approved before the time of the exam and will generally be given only in case of medical or family emergencies, which must be appropriately documented. More detailed policy for granting a makeup exam may be found in the undergraduate catalog under Attendance Policies (`https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx`).

For cases of illness, a doctor's signed note will be required.

Email Use email only for administrative matters. Email me at `burr@stat.ufl.edu`, and put the course number in the subject line. See me or a TA in person for content questions. The ideal time to ask questions is right after class.

Honor Code All work on quizzes and exams must be entirely your own. Refer to the UF Honor Code at `https://sccr.dso.ufl.edu/process/student-conduct-code/`

Disabilities Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, `www.dso.ufl.edu/drc/`) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluations Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at `http://gatorevals.aa.ufl.edu/students/`. Students will be notified when the evaluation period opens (usually near the end of the semester), and can complete evaluations through the email they receive from GatorEvals, or in their Canvas course menu under GatorEvals. Summaries of course evaluation results are available to students at `http://gatorevals.aa.ufl.edu/public-results/`.