GENERAL COURSE INFORMATION:

1. How much algebra and calculus do I really need to know for this course?
   You will critically need to be 150% comfortable with all aspects of basic algebra, including powers, roots, laws of exponents, logarithms, proportions, equation-solving, graphing, factoring, etc. These techniques will be used from the very first days of the course, until the very last. Calculus will be used after Chapter 1. Important topics will include (but are not necessarily limited to):
   - Understanding the formal concept of taking the limit of a function
   - Understanding the meaning of a continuous (and piecewise-continuous) function
   - Understanding the definition and meaning of the derivative and integral of a function
   - Derivatives and integrals of powers, exponentials, logarithms, products, quotients
   - Chain Rule for derivatives and integrals (i.e., “u-substitution” in the latter)
   - Definite integrals and the Fundamental Theorem of Calculus: \( \int_a^b f(x) \, dx = F(b) - F(a) \)
   - Improper integrals
   - Integration by Parts
   - Double integration in both Cartesian and polar coordinates
   - Factorials, Combinations, Permutations
   - Binomial Formula: \((x + y)^n = x^n + \binom{n}{1}x^{n-1}y + \binom{n}{2}x^{n-2}y^2 + \ldots + \binom{n}{n-1}xy^{n-1} + y^n\)
   - Geometric series (both finite and infinite)

Other, more specialized integration techniques, such as “trigonometric substitution” and “partial fractions,” as well as formal power series (e.g., Taylor series), and convergence tests for general infinite series, will NOT be necessary. But fail to review at your own risk!!

2. How is the course organized this semester?
   For now and the foreseeable future, all Stat 311 lectures will be recorded asynchronously on video, and posted online, on the course website (and possibly Canvas). There will be no face-to-face or real-time video office hours, sorry. All questions on the course material (i.e., no algebra or calculus, please) should be sent to me via email (ifischer@wisc.edu). This has worked extremely well in previous semesters; my response time is usually pretty quick (often just a few minutes), and explanations are thorough and clear. You may email me as many times as necessary, until you are 100% satisfied with the answer.

3. Besides the textbook, where do I find the remaining course material?
   ALL course material is posted online on my webpage through the Department of Statistics, at http://pages.stat.wisc.edu/~ifischer/Intro_Stat/stat311/. (as well as Canvas, eventually). I encourage you to start there.

4. Are there any additional sources?
   A separate set of Lecture Notes exists in .pdf format, posted at the link http://pages.stat.wisc.edu/~ifischer/Intro_Stat/Lecture_Notes/, which I have used in lower level courses (e.g., Stat 301). Stat 311 only covers the first half of these notes, albeit in
much greater depth. (Stat 312 covers the second half). In addition to the textbook, these notes will be used to assign homework problems (see below).

5. **How will lectures be presented?** Via PowerPoint slides that are arranged by textbook chapters.

**HOMEWORK ASSIGNMENTS:**

6. **Where do I find them?** The HW page along with their due dates, plus exam dates. This schedule should be used as a guide to pace the timing of your viewing of the lecture videos.

7. **How are they structured, and how will they be graded?**
   HW problems come from TWO sources: the textbook and Lecture Notes described in 4. A subset of problems will be graded (method and answer), so skip problems at your own risk!

8. **How often is homework assigned, and how much will they count? What if I miss one?**
   There are 5 homework assignments during the semester; the lowest HW score will be dropped at the end; the remaining ones will be scaled to 25% of your final grade. Immediately after each HW is submitted, I will post the solutions to the Lecture Notes problems here, so late submissions cannot be accepted!

9. **How should we submit them?**
   Probably via Canvas; the grader will be able to give you more details…
   **YOU ARE RESPONSIBLE FOR CONFIRMING ITS RECEIPT!!**

**EXAMS and FINAL GRADES:**

10. **How will exams be given in the current, highly unusual environment?**
    Three exams will be in the form of take-home projects, each worth 25%. (Homework will account for the remaining 25%.)

11. **How are they formatted, and how will they be scored?**
    Each take-home exam is NON-cumulative (but may use previous course material), and will be graded on both method and answer. However, if a “minor” mathematical error is committed in an early part of a problem, and propagates through the rest of it, usually only the initial “minor” error will be penalized, **provided the method of solution is sound.** But there are several exceptions to this:
    - Either no work, or just a general formula with no values plugged in, is shown.
    - The final answer is incorrect, and differs greatly from the correct answer.
    - The final answer is impossible or nonsensical (e.g., body temp = \(\sqrt{-157.8} \, ^\circ\text{F}\)).
    - As the initial error propagates, either it causes the rest of the problem to be so extremely complex, that it is effectively rendered unsolvable, or at the opposite extreme, the initial error effectively trivializes the problem, so that nothing is being tested.

12. **Will final course grades be “curved” in any way?**
    At the end of the semester, each student will have received a total course score out of 400 points, which includes everything. **This overall class distribution is what I will curve, starting (but not ending) with the customary grade cutoffs A = 90-100%, AB = 88-89%, etc.** I might then need to “tweak” the results, depending on other factors (e.g., natural gaps in the distribution). I do not grade on a standard bell curve, i.e., 20% receive A, 20% receive B, etc.