

## **PSYC 480/480L -- INTERMEDIATE STATISTICS AND LAB**

**Sections 01 -- Spring 2022 -- TTh 9:25 - 10:40 (lecture) and W 3:00 - 5:50 (lab)**

**COASTAL CAROLINA UNIVERSITY -- Dr. King**

**Enrollment Note:** You cannot be enrolled in Psyc 480 without also being enrolled in Psyc 480L and vice versa. Psyc 225/225L or equivalent and Math 130 or equivalent are prerequisites for this course.

**Attendance Policy:** You are NOT REQUIRED to attend class or lab. All exercises will be posted online and must be completed online. The purpose of the class and lab is to ask and answer questions, clarify, and so on. No new material that isn't available online will be presented in class.

**Illness Policy:** If you feel sick, DON'T COME TO CLASS. There is no need to. Everything that can be done in class can also be done online. If you do come to class, be aware that Dr. Benson (university president) has issued a mask mandate. You will be expected to wear a mask that covers both your mouth and nose while inside university buildings.

**Website / Textbook:** There is a website to support this course. DO NOT go to Moodle. Go to [ww2.coastal.edu/kingw](http://ww2.coastal.edu/kingw) and click on the link to Psyc 480. There is no textbook for this course. Several online textbooks are listed at the website. I may also at times supply you with pages from a textbook to read in place of a lecture. Other materials will be distributed at the website or by e-mail as needed.

**Office and Office Hours:** My office is Smith Science Bldg. 217-I, hours W 1:00-3:00 and TTh 10:50-12:50 (in my office or someplace else where we can find a meeting place or possibly by Zoom if I can get it set up). Don't call me. I won't return your call. If you need to get in touch with me, you can reach me by e-mail Monday through Friday, 9 to 5, at [kingw@coastal.edu](mailto:kingw@coastal.edu), although I may be slow to respond outside of scheduled office hours. Make sure you put Psyc 480 in the subject line. I ignore e-mails when I don't know who they're from. If you come to my office, WEAR A MASK over both your mouth and nose.

**Background:** This is a second statistics course. It is assumed that you covered (and remember!) the following topics from your first statistics course: variables (independent and dependent), categorical (nominal), ranking (ordinal), and numeric (interval and ratio) levels of measurement, measures of center or central tendency (mean and median), what variability is and how to quantify it (sum of squares, variance, standard deviation, interquartile range), standardization (z-scores), confidence intervals, basic hypothesis testing, null vs. alternative hypotheses, Type I and Type II error, t-tests, simple analysis of variance, correlation, simple linear regression, chi-square tests (especially the test of independence), line graphs, bar graphs, histograms, box plots, scatter plots. You should also know a little basic experimental design: simple vs. factorial designs, between vs. within subjects, matched groups vs. repeated measures, true vs. quasi-experiment, what confounds are and how to control for them. We will review most of this during the first week of the course.

**Calculator and Software:** I assume everyone has a good scientific calculator. It does not have to be a graphing calculator. Don't ask me how to use it. Read the manual. (You can get it online if you've lost yours.) Don't go out and spend a lot of money on one if you don't already have one. You can get an acceptable one for less than \$10. If you have a calculator app on your phone, make sure it can do squares, square roots, and logs. You will also want to have access to statistical software called R. I will use it, especially for graphics, and I will use output from various statistical procedures as part of the class materials. It will also be a whole lot easier to do some of the procedures we will cover if you have software that will do it for you. It's free. If you want it for your own computer, you can download a free

copy at [www.r-project.org](http://www.r-project.org). R is also installed on just about every university computer in classrooms, labs, library, etc. It won't work on a tablet or a Chromebook, but there is a workaround. You can use SPSS if you have it, but I don't know how it works (don't ask me). There is also [vassarstats.net](http://vassarstats.net) in a pinch.

**Topics to be Covered in This Course:** Each of the following methodologies will be covered: data summarization; relationships between a grouping variable (IV) and a numeric response (DV), including t-tests, simple and factorial ANOVA, and nonparametric methods; relationships between numeric variables (correlation and regression and more advanced techniques based on those, such as simple mediation and path analysis, if time permits). Typically, about half of the semester is devoted to regression topics and half to grouped data (t-tests, ANOVA), although I make no promises about that at this time. Special attention will be paid to unbalanced factorial designs, which are common in the social sciences. (Unbalanced designs will be the toughest subject we cover.)

**Grading:** Several of the class and lab exercises will have a submit button at the bottom. You will have to complete and submit them by the deadline given in the exercise. Your grade will be based on these exercises. No incompletes! This is my last semester at CCU. I cannot give incompletes.

**Notice to Seniors:** If you are planning to graduate next Fall, you must file an application to graduate this semester. Please look at your program evaluation after you preregister and before submitting your graduation application online. If it does not say Pending Anticipated Complete at the top, your application will not be approved. Talk to your adviser. If it does say that, you should be good to go. It would be best if you applied a few days after you preregister. Waiting until the last minute is a bad idea!

**Success Guide for This Course:** People come into this course with a certain amount of anticipatory anxiety. Personally, I think that is unjustified. The reason people do poorly in stat courses is because they don't do the work, and there's a lot of it, no denying that. If you can do the following things, I can almost guarantee that you'll pass this course.

1. Keep up! Don't fall behind. You should be at my website three to four times a week following through the lectures and lab exercises and submitting those that need to be submitted. Notice I didn't say "reading," I said "following." Passive reading isn't enough. Take notes. Work through the examples with me. Make sure you understand what's going on. Don't shortchange it. Statistics is not a spectator sport. You can't learn it by watching me do it.
2. Do any and all practice problems that I post. I'm not going to collect or grade all of them, and in the past that has led students to believe that they don't really have to do them. That's called laziness. Don't be lazy. You're not going to learn this without putting in the work.
3. Do all the labs whether they are going to be graded or not.
4. If there's something you don't understand, ASK!

=====Official Stuff That You Don't Need to Read=====

**Course Objectives:** The goal of this course is to familiarize students with techniques used to analyze scientific data in the behavioral sciences. This course will prepare students to: 1) compute and interpret basic and advanced descriptive statistics; 2) compute and interpret basic and advanced inferential statistics; 3) display data and relationships between variables graphically.

**Student Learning Outcomes:** Upon completion of this course, students should be able to: 1) look at a dataset, determine what the explanatory and response variables are, determine if they are categorical or numeric, and propose a reasonable statistical analysis; 2) do a competent statistical analysis of the data; 3) see, analyze, and explain statistical relationships in categorical data; 4) see, analyze, and explain statistical relationships in numerical data.

**ADA Statement:** Coastal Carolina University is committed to equitable access and inclusion of individuals with disabilities in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. Individuals seeking reasonable accommodations should contact Accessibility & Disability Services (843-349-2503 or <https://www.coastal.edu/disabilityservices/>).