

Writing In Introductory Statistics Courses York College of the City University of New York

A Handbook on Writing in Statistics at York College



Written by: Lauren Grebe

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Topic 1: Writing in Statistics at York College

Writing is an integral component of the educational experience you receive at York College, with a mission to provide an engaging and effective educational environment that promotes learning, research, scholarship, and service. Although writing may not be the first thing that comes to mind when enrolling in a statistics course, writing is an essential skill used across many disciplines, including statistics. It is the way we convey meaningful information about the processes involved in statistical concepts, such as data analysis, regression, correlation, distributions, and central limit theorem, to name a few.

When writing in the statistics discipline, the writer should meaningfully explain the methods involved in the specific statistical design utilized. This will facilitate the reader's understanding of the observed patterns, trends, statistical significance, and limitations. In this guide, you will learn how to incorporate writing to facilitate your learning experience in statistics courses at York College.

Topic 2: Statistics Assignments

When you enroll in statistics courses at York College, you can expect to learn the foundational knowledge behind many statistical concepts, the goals of scientific research, how to complete statistical functions using a specific software program (e.g., Excel, R), and how to adequately convey your results in writing. Assignments in statistics allow students to practice working with a dataset and integrate the foundational knowledge learned from class lectures. After data analysis is complete, the professor typically requires a written product to summarize the procedures and results of the assignment. This written product allows you as the student to demonstrate your knowledge of the foundational concepts, statistical procedures utilized, and how they relate to the final statistical output achieved. In order to successfully write in statistics, you must fully understand these concepts so that those reading your final product understand what was done, why it was done, and how you achieved your results. This may seem like a tall order task, but your professor is there to guide you in this process.

When you first receive a class assignment, you should begin by reading the instructions carefully. Try to draw the connections to your class lectures and notes, and create a plan on how you will complete the assignment. Go back to the instructions throughout completion of the assignment to ensure you have fulfilled the objectives. If you have any questions, it is important to discuss the assignment objectives, expectations, and grading criteria with your professor.

Students enrolled in introductory statistics courses at York College encounter many different assignments over the course of the semester. The typical assignment that involves *writing* is the laboratory write ups associated with the weekly course topics. Of course, professors may assign alternative assignments that involve writing in introductory statistics courses.

Topic 3: Taking Notes in Statistics

During your course lectures, it is imperative to take notes so that you can refer back to them when you complete assignments and laboratory write ups, and study for exams. Taking notes starts the process of understanding and engaging with the presented information, as well as drawing connections. Students who take notes are also more likely to remember the information for future use, such as recalling the information on an exam. The amount of information presented in one course lecture may seem overwhelming and you do not have to write every word presented by your professor. Instead, try to focus on the main ideas when taking notes. For example, if the topic of a class is regression, attempt to include the meaning of regression, why you would need to use a regression, and some examples of how to complete a regression when taking notes. Make sure you leave some time during each class to understand the presented concepts and ask for clarification when needed. Additionally, read through your notes as soon as possible following the lecture so that any missing information can be completed.

Taking notes during class is considered informal writing, so you do not have to be concerned with writing in complete sentences or using appropriate punctuation. Professors do not typically grade your note taking skills, so try to find the best method that works for you. You can incorporate the use of abbreviations, short phrases, and bullet points whenever possible. Additionally, before the class begins, decide which method of note taking works best- typing on a computer or tablet, or hand-writing on paper. It is best to plan this out ahead of time, to allow more time for the comprehension of the material presented and less time fumbling to find the best method *during* the lecture time. Should you miss a class, let the professor know ahead of time and try to get the lecture materials from the professor or another classmate.

When taking notes from additional sources outside of class time, focus on the material that relates to the concepts presented in class and the course objectives. Define statistical terms and try to understand the reasons why different

methods would be used. Adding and working through examples will also be beneficial in building your knowledge base about the various statistical methods that can be used. Statistics may be a daunting topic for some students and if you feel this way, you are not alone! Take advantage of the resources provided by your professor and leave time throughout the semester to gradually build your knowledge base and understand these complex topics.

Topic 4: The Importance of Writing in Statistics

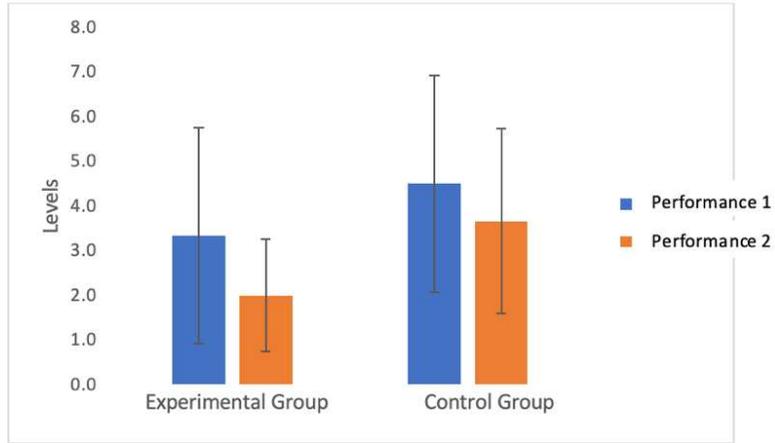
Just like in any other discipline, writing is an essential skill to have in the statistics discipline. Although much of statistics involves the coding of numerical values and appropriate use of methods to achieve your desired results, reporting the

results is equally as important. When writing the results section of a scientific paper for publication, your goals are to ensure the reader understands what method was used, why it was used, and the reported result, including all the necessary numerical values. For example, when writing the results of a t-test, you have to include the means and standard deviations of the two groups you are comparing, as well as the outcome value and *P*-value (e.g., $P < .001$) being used. Clear and concise language should be used when writing statistical results, thus superfluous and narrative writing should be avoided.

Tables and graphs may be used, and are often encouraged, to present statistical information in a visual format, especially when working with a large dataset with multiple groups. Presenting information in a table or graph allows for easier reading and visual comparison between groups. Figure 1 (below) is an example of a graph that can be used to display data using APA format, which is the citation style typically used in the statistics discipline. However, if another citation style is needed, the following resource can be used for formatting guidelines: Purdue Online Writing Lab at <https://owl.purdue.edu/>.

Figure 1

Title of Figure



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