MATH 330: Probability and Statistics

Nyack College, Mathematics Department
SPRING 2021
Fridays 11:10 AM-2:05 PM

Professor Ashanti Dawson
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Class: NLS & NA

Office Hours: By Appointment Only

Prerequisite: Math 110 or instructor's permission.

Required Textbook: Introductory Statistics (Loose-leaf) Edition: 9th Author: Mann; WILEY ISBN: 9781119148326

References: Aufmann, Barker and Lockwood, Beginning Algebra with Applications, Houghton Mifflin, Boston, 2000.
Jesse R Phagan, Applied Mathematics, Goodheart Willcox, 1997.
Fleming and Nellis, Principles of Applied Statistics, Routledge, 1994.

Web Sites:

www.math.com
Homework help, Test preparation skills, Tutoring.

www.webmath.com
Type your problem and receive a step-by-step solution.

www.thomsonedu.com/bstatistics/asw
Companion Website.

The Purpose of the Course: Probability and Statistics not only fills a Core Component requirement for students in a variety of disciplines, it provides preparation for interested students to begin further study of mathematics.

Course Description: A study of Statistics including data analysis, frequency distributions, measures of location, variability, distribution shape, probability, combinations, permutations, Bayes' Theorem, discrete probability distributions, continuous probability distributions, sampling distributions.

Student Learning Goals: Upon successfully completing this course, the student will have; increased their understanding of probability and statistics at the college level; renewed and sharpened their analytics and numerical skills;

Class Policy on Attendance and Lateness: Attendance will be taken at every class. Excessive absence and lateness may result in a lower final grade. You are allowed **two** unexcused absences for this class. **Two tardies (after 11:20 AM)** will be considered as **one unexcused absence** and each unexcused absence exceeding the **two** allowed unexcused absences will cause **2%**, **per absence**, to be deducted from the student's final grade. **Work missed is the responsibility of the student**. Excuses must be provided to the professor **within two weeks** of the absence.

Policy Regarding Plagiarism and Cheating: There is a strong policy against plagiarism and cheating in this course. Plagiarism is defined by the MLA Handbook as "the act of using another person's ideas or expressions … without acknowledging the source … to repeat as your own someone else's sentences, more or less verbatim.". Any student at Nyack College involved in cheating including plagiarism, is subject to the following discipline:

First offence – failure in the course involved,
Second offence – dismissal from the college.

Course Requirements: Your grade in this course will be determined as follows:

1. Handwritten Homework	10%
2. Class Preparation and Participation	10%.
3. Wiley eTextbook Assignments	10%.
4. Three Exams	60%.
5. Final Exam (Optional)	10%.
Total	**100% / 100%**.

Notes: Homework will be collected on a "spot check" basis and will be graded. **Homework showing answers without work will receive a grade of zero. Late Homework will receive a grade of zero.**

Grade Distribution:

A	**96-100**	4.0
A-	**90-95**	3.7
B+	**87-89**	3.3
B	**83-86**	3.0
B-	**80-82**	2.7
C+	**77-79**	2.3
C	**73-76**	2.0
C-	**70-72**	1.7
D+	**67-69**	1.3
D	**63-66**	1.0

D-	**60-62**	0.7
F	**Below 60**	0.0

Missed Tests must be made up BEFORE the NEXT CLASS period with PROFESSOR'S PERMISSION. (They can be scheduled by making an appointment with the North Campus Faculty Secretary, ext. 4420). **If the test is not completed by the next class period, it will not be accepted unless arrangements are made ahead of time.** (Student must call North Campus Faculty Secretary to make an appointment within **3** hours after starting a test).

The final exam will be cumulative.

Calculator: On some tests and the final exam, you will be expected to use a scientific calculator or graphing calculator. You must **not** share a calculator with anyone else while taking a test or the final exam.

FINAL EXAM POLICIES:

1. All exams will be given in the regular meeting place of the class.
2. If the class meets over more than one period in one day, the exam is identified by the first period it meets on the first day of the week it meets.
3. Since the new schedule allows for significant time between exams, final exams may not be postponed even if a student has three exams on one day.
4. Students must take all final exams when they are scheduled. Exams will not be given early in order to facilitate transportation plans or for any other reason.
5. Make-up exams will only be given in the case of a true emergency. Oversleeping, not prepared, not feeling well, and the like are not acceptable emergencies. In the case of a true emergency (hospitalization, death of an immediate family member, and the like), documentation as to the emergency must be presented to the professor, and the exam rescheduled between the student and the professor. This make-up exam must be taken within thirty days (30) of the last day of the exam period.
6. If students are on the "no-finals" list at the end of semester (if there are unusual circumstance see #7 below), they may not take their final examinations in any course. They will be given a "zero" on their final exams, their semester grades will be lowered accordingly, and neither their grade report nor their transcript will be released. If the student is subsequently able to pay their bill, their grade report and transcript will be released. However, the student may not make up their finals. The grades for the courses will be reflected their "zero" on the final.
7. If the student is on the "no-finals" as the results of unusual circumstances, the student may request permission from the Executive Cabinet of the College to take their final exam as scheduled. If the request is granted, the student's grade report and transcript will not be released and they will not be able to participate in graduation ceremonies until their account has been cleared.

CLASS ASSIGNMENTS:

Session	Sections	Topics
	Chapter 1	**Introduction**
1.1		Statistics and Types of Statistics
1.2		Basic Terms
1.3		Types of Variables
1.5		Population Versus Sample
Chapter 2		**Organizing Data**
2.1		Organizing and Graphing Qualitative Data
2.2		Organizing and Graphing Quantitative Data
Chapter 3		**Numerical Descriptive Measures**
3.1		Measures of Central Tendency for Ungrouped Data
3.2		Measures of Dispersion for Ungrouped Data
3.3		Mean, Variance, and Standard Deviation for Grouped Data
3.4		Use of Standard Deviation
3.5		Measures of Position
TBA		Exam#1-Chapters 1-3
Chapter 4		**Probability**
4.1		Experiment, Outcome, and Sample Space
4.2		Calculating Probability
4.3		Marginal Probability, Conditional Probability, & Related Probability Concepts
4.4		Intersection of Events & Multiplication Rule
4.5		Union of Events & Addition Rule
4.6		Counting Rule, Factorials, Combinations, & Permutations
Chapter 5		**Discrete Random Variables and Their Probability Distributions**
5.1		Random Variables
5.2		Probability Distribution of a Discrete Random Variable
5.3		Mean and Standard Deviation of a Discrete Random Variable
Chapter 6		**Continuous Random Variables and the Normal Distribution**
6.1		Continuous Probability Distribution and the Normal Probability Distribution
6.2		Standardizing a Normal Distribution
6.3		Applications of the Normal Distribution
6.4		Determining the z and x Values When an Area Under the Normal Distribution Curve is Known
TBA		Exam#2-Chapters 4-6
Chapter 7		**Sampling Distributions**
7.1		Sampling Distributions, Sampling Errors and Nonsampling Errors

7.2 Mean and Standard Deviation of $\bar{x}$
7.3 Shape of the Sampling Distribution of $\bar{x}$
7.4 Applications of the Sampling Distribution of $\bar{x}$
7.5 Population and Sample Proportions, and the Mean, Standard Deviation, and Shape of the Sampling Distribution of $\hat{p}$
7.6 Applications of the Sampling Distribution of $\hat{p}$

Chapter 8 Estimation of the Mean and Proportion
8.1 Estimation: Point Estimate and Interval Estimate
8.2 Estimation of a Population Mean: Population Standard Deviation (σ) is Known
8.3 Estimation of a Population Mean: Population Standard Deviation (σ) Is Unknown
8.4 Interval Estimation of a Population Proportion: Large Samples

Chapter 9 Hypothesis Tests About the Mean and Proportion
9.1 Hypothesis Tests: An Introduction
9.2 Hypothesis Tests About μ : Population Standard Deviation (σ) Known
9.3 Hypothesis Tests About μ : Population Standard Deviation (σ) Unknown
9.4 Hypothesis Tests About a Population Proportion: Large Samples

TBA Exam#3-Chapters 7-9

***HOMEWORKS WILL BE ASSIGNED IN CLASS. It is expected that students must bring the required textbook and read the assigned reading before coming to every class.**
***No Cellular in any Quiz and Test Time.**