

NORTHWESTERN CONNECTICUT COMMUNITY COLLEGE

COURSE SYLLABUS

Course Title: Principles of Statistics

Course # MAT*167

Course Description: 3 credits

This course covers basic concepts used in collecting, presenting and analyzing data, descriptive statistics, probability distributions, sampling theory, statistical inference to include hypothesis testing, regression and correlation. **The use of a graphing calculator (TI-83/84 or TI-83/84Plus) is highly recommended and Microsoft Excel is required.**

Pre-Requisite/Co-Requisite: C or better in MATH 137, 137X or equivalent

Goals:

The student should develop an understanding of the basic concepts used in statistics and acquire the techniques used to apply these basic concepts to picture and describe the world.

Outcomes:

Upon successful completion of this course, each student must have demonstrated understanding and competency in each of the following topics and techniques (through in-class testing of each individual student independently):

1. Identify various types of qualitative and quantitative data.
2. Identify various types of experimentation and sampling techniques and samples vs populations.
3. Create relative and cumulative frequency distributions.
4. Identify and create statistical graphs including frequency polygons, pareto charts, dot plots, stem and leaf plots, pie charts, and scatter plots.
5. Calculate measures of center (mean, median, mode, midrange).
6. Calculate measures of variation (range, variance, standard deviation).
7. Calculate measures of relative standing (z-scores, quartiles, percentiles).
8. Utilize the Empirical Rule for data with a bell-shaped distribution.
9. Calculate theoretical and empirical probabilities, odds, complementary events.
10. Calculate probabilities utilizing the addition and multiplication rules, conditional probability rules, and permutations and combinations.
11. Identify valid probability distributions and calculate the mean, variance, standard deviation, and expected value of these distributions.
12. Identify binomial probability distributions and calculate the associated probabilities.
13. Calculate the mean and standard deviation for any discrete or binomial probably distribution.

14. Identify continuous probability and the standard normal probability and calculate the associated probabilities.
15. Calculate the mean and standard deviation for any continuous probably distribution.
16. Apply the Central Limit Theorem to continuous probability distributions when appropriate.
17. Utilize the Normal Approximation to the Binomial Distribution when appropriate.
18. Create a confidence interval to estimate a population proportion or mean (standard deviation of population known or unknown).
19. For hypothesis testing, identify null and alternative hypotheses, Type I and II errors, and properly state conclusions.
20. Calculate test statistics and identify critical regions, significance levels, critical values, and P-values for hypothesis testing.
21. Utilize hypothesis testing to test claims about population proportions and means (standard deviation of population known or unknown).
22. Demonstrate a basic understanding of statistical methods and apply these techniques in analyzing statistical reports using available technology.
23. Demonstrate quantitative decision making ability based on statistical information.
24. Perform statistical analysis of real world data to draw conclusions through hypothesis testing.

College Policies

Plagiarism: Plagiarism and Academic Dishonesty are not tolerated at Northwestern Connecticut Community College. Violators of this policy will be subject to sanctions ranging from failure of the assignment (receiving a zero), failing the course, being removed/expelled from the program and/or the College. Please refer to your “Student Handbook” under “Policy on Student Rights,” the Section entitled “Student Discipline,” or the College catalog for additional information.

Americans with Disabilities Act (ADA): The College will make reasonable accommodations for persons with documented learning, physical, or psychiatric disabilities. Students should notify Dr. Christine Woodcock, the Counselor for Students with Disabilities. She is located at Green Woods Hall, in the Center for Student Development. Her phone number is 860-738-6318 and her email is cwoodcock@nwcc.edu.

School Cancellations: If snowy or icy driving conditions cause the postponement or cancellation of classes, announcements will be made on local radio and television stations and posted on the College’s website at www.nwcc.edu. Students may also call the College directly at **(860) 738-6464** to hear a recorded message concerning any inclement weather closings. Students are urged to exercise their own judgment if road conditions in their localities are hazardous.

Use of Electronic Devices: Some course content as presented in Blackboard Learn is not fully supported on mobile devices at this time. While mobile devices provide convenient access to check in and read information about your courses, they should not be used to perform work such as taking tests, quizzes, completing assignments, or submitting substantive discussion posts.

Sexual Assault and Intimate Partner Violence Resource Team: NCCC is committed to creating a community that is safe and supportive of people of all gender and sexual identities. This pertains to the entire campus community, whether on ground or virtual, students, faculty, or staff.

Sexual assault and intimate partner violence is an affront to our national conscience, and one we cannot ignore. It is our hope that no one within our campus community will become a victim of these crimes. However, if it occurs, NCCC has created the SART Team - Sexual Assault and Intimate Partner Violence Resource Team - to meet the victim's needs.

SART is a campus and community based team that is fully trained to provide trauma-informed compassionate service and referrals for comprehensive care. The team works in partnership with The Susan B. Anthony Project to extend services 24 hours a day, 7 days a week throughout the year.

The NCCC team members are:

Ruth Gonzalez, Ph.D.	860-738-6315	Green Woods Hall Room 207
Susan Berg	860-738-6342	Green Woods Hall Room 223
Kathleen Chapman	860-738-6344	Green Woods Hall Room 110
Michael Emanuel	860-738-6389	Founders Hall Annex Room 308
Seth Kershner	860-738-6481	Library
Jane O'Grady	860-738-6393	Founders Hall Annex Room 212
Robin Orloski	860-738-6416	Business Office Room 201
Patricia Bouffard, Ex-Officio	860-738-6319	Founders Hall Room 103
Savannah Schmitt		Student Representative

At NCCC we care about our students, staff and faculty and their well-being. It is our intention to facilitate the resources needed to help achieve both physical and emotional health.