STAT G012N: BINOMIAL AND NORMAL DISTRIBUTIONS

Item	Value
Curriculum Committee Approval Date	03/04/2025
Top Code	170200 - Mathematics Skills
Units	0 Total Units
Hours	6-10 Total Hours (Lecture Hours 0; Lab Hours 6-10)
Total Outside of Class Hours	0
Course Credit Status	Noncredit: Support Course (U)
Material Fee	No
Basic Skills	Basic Skills (B)
Repeatable	Yes; Repeat Limit 99
Open Entry/Open Exit	Yes
Grading Policy	P/NP/SP Non-Credit (D)

Course Description

This noncredit course introduces the basic concepts of probability, the addition rule and complements, independence and the multiplication rule, conditional probability and the general multiplication rule, and counting techniques and is designed to provide complementary support for college-level statistics courses. COREQUISITE: MATH G100, MATH G103, MATH G104, MATH G115, MATH G115S, MATH G120, MATH G140, MATH G140S, MATH G170, MATH G180, MATH G185, MATH G280, MATH G285, MATH G287, STAT C1000, STAT C1000E, PSYC G140, SOC G125, or ECON G160. Open Entry/Open Exit. NOT DEGREE APPLICABLE. Not transferable.

Course Level Student Learning Outcome(s)

1. Course Outcomes
2. Distinguish between discrete and continuous random variables, including the binomial and normal distributions.

Course Objectives

- 1. Construct discrete and binomial probability distributions.
- 2. Construct continuous and normal probability distributions.
- 3. Compute the mean and standard deviation of the binomial and normal distributions.

Lecture Content

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Lab Content

Discrete and Binomial Random Variables State the properties of discrete and binomial probability distributions. Compute the probability of discrete and binomial distributions. Compute and interpret the mean (expected value) and standard deviation of discrete and binomial distributions. Continuous and Normal Random Variables State the properties of continuous and normal probability distributions. Compute the probability of continuous and normal distributions. Compute and interpret the mean and standard deviation of continuous and normal distributions.

Method(s) of Instruction

- Enhanced NC Lab (NC2)
- Online Enhanced NC Lab (NC6)
- Live Online Enhanced NC Lab (NCA)

Reading Assignments

Textbook and instructor handouts

Writing Assignments

Writing up solution methods to course concept problems within assignments and course assessments.

Out-of-class Assignments

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Demonstration of Critical Thinking

Students will demonstrate critical thinking and problem-solving skills by solving, analyzing, and interpreting discrete and continuous random variables including the binomial and normal probability distributions. Demonstrations will be shown by completing assignments, participating in discussions, and completing required assessments.

Required Writing, Problem Solving, Skills Demonstration

Students will demonstrate their problem-solving skills through completing assignments and course assessments by showing their step-by-step processes to solving problems from start to finish.

Eligible Disciplines

Mathematics: Master's degree in mathematics or applied mathematics OR bachelor's degree in either of the above AND master's degree in statistics, physics, or mathematics education OR the equivalent. Master's degree required.

Textbooks Resources

1. Required Illowsky, B., Dean, S.. Introductory Statistics, 2 ed. OpenStax (OER), 2023