

MTH 243: Introduction to Probability and Statistics 1

Course Description: Introduces probability and descriptive statistics. Includes critical readings of graphs and data, basic probability theory, random variables, and binomial and normal probability distributions. Culminates with the Central Limit Theorem. Recommended prerequisite: MTH 111 (for those needing MTH 241 or MTH 251), MTH 105, or instructor approval. A graphing calculator is required. TI -83 or TI -84 recommended.

Specifically, students who successfully complete MTH 243 (Introduction to Probability and Statistics 1) will be able to achieve the following outcomes:

- model and solve real-world problems using counting theory and probability; narrative, symbolic, and algebraic strategies will be used to model and interpret solutions that use applications of permutations, combinations, tree diagrams, probability distributions (including, but not limited to, the binomial and normal), simulations, and conditional probability models.
- analyze and describe real-world data sets using descriptive statistics; narrative, graphical, and algebraic methods will be used to summarize and quantify data for the purpose of making informed decisions.
- use the graphing calculator to obtain numeric values for the measures of central tendency, measures of dispersion, relative position, and for graphical representations of statistical display.

Performance Based Outcomes in Mathematics

Students who successfully complete any mathematics course at Central Oregon Community College will be able to:

1. *Work independently to explore mathematical applications and models, and to develop algebraic/symbolic, graphical, numerical, and narrative skills in solving mathematics problems.*
2. *Work as a member of a group/team on projects or activities that are designed to explore mathematical applications and models.*
3. *Use both written and oral skills to communicate about mathematical concepts, processes, complete mathematical solutions and their implications.*
4. *Use a variety of problem solving tools including symbolic/algebraic notation, graphs, tables, and narratives to identify, analyze, and solve mathematical problems.*
5. *Develop mathematical conjectures and use examples and counterexamples to examine the validity and reasonableness of those conjectures.*
6. *Create and analyze mathematical models of real world and theoretical situations, including the implications and limitations of those models.*
7. *Use appropriate technologies to analyze and solve mathematics problems, and verify the appropriateness and reasonableness of the solution(s).*

