

LSU Dual Enrollment Program for Math

Math 1029 Contemporary Math COURSE PROFILE 11-18-2025

BOARD OF REGENTS COMMON COURSE NUMBER: CMAT 1103 Contemporary Math

ETEXT: *Thinking Mathematically, 8e, MyLab Math*, Robert Blitzer

HIGH SCHOOL COURSE CODE: 160347

CHAPTERS

7 – Algebra: Graphs, Functions, and Linear Systems

11 – Counting Methods and Probability Theory

12 – Statistics

14 – Graph Theory

The number in parentheses indicates the number of homework exercises on that topic in MyLab Math.

Chapter 7: Algebra: Graphs, Functions, and Linear Systems

Section 7.1 Introduction to the Rectangular Coordinate System (19)

Plot points in the rectangular coordinate system

Graph equations in the rectangular coordinate system

Section 7.2 Graphing Linear Equations (17)

Use intercepts to graph a linear equation

Graph horizontal lines

Graph vertical lines

Section 7.3 Solving Systems of Linear Equations (32)

Determine whether an ordered pair is a solution of a linear system

Solve linear systems by graphing

Solve linear systems by the substitution method

Solve linear systems by the addition method

Section 7.4 Graphing Systems of Linear Inequalities (24)

Graph a linear inequality in two variables

Graph a system of linear inequalities

Section 7.5 Linear Programming (16)

Use graphs to determine the maximum and minimum of an objective function

Use linear programming to solve application problems

Chapter 11: Counting Methods and Probability Theory

Section 11.1 The Fundamental Counting Principle (27)

Use the Fundamental Counting Principle to find the number of possible outcomes

Understand concepts involving the Fundamental Counting Principle

Section 11.2 Permutations (35)

- Use the Fundamental Counting Principle to count permutations
- Evaluate factorial expressions
- Use the permutations formula
- Find the number of permutations of duplicate items
- Understand concepts involving permutations

Section 11.3 Combinations (27)

- Distinguish between permutation and combination problems
- Use the combinations or permutations formula to evaluate expressions
- Solve problems involving combinations
- Use combinations, permutations, or the Fundamental Counting Principle to solve problems
- Understand concepts involving combinations

Section 11.4 Fundamentals of Probability (46)

- Compute theoretical probability
- Compute empirical probability
- Understand concepts involving fundamentals of probability

Section 11.5 Probability with the Fundamental Counting Principle, Permutations and Combinations (23)

- Compute probabilities with permutations
- Compute probabilities with combinations
- Understand concepts involving probability

Section 11.6 Events Involving Not and Or; Odds (50)

- Find the probability that an event will not occur
- Find the probability of one event or a second event occurring
- Solve conceptual problems involving probability
- Understand and use odds

Section 11.7 Events Involving And; Conditional Probability (44)

- Find the probability of one event and a second event occurring
- Compute conditional probabilities
- Understand concepts involving conditional probability

Section 11.8 Expected Value (12)

- Compute the expected value
- Use expected value to solve applied problems
- Use expected value to determine the average payoff or loss in a game of chance

Chapter 12: Statistics

Section 12.1 Collecting Data and Organizing Data (33)

- Select an appropriate sampling technique
- Understand and interpret data
- Organize and present data
- Apply estimation techniques to information given by graphs
- Identify deceptions in visual displays of data

Understand concepts involving sampling, frequency distributions, and graphs

Section 12.2 Measures of Central Tendency (45)

Determine the mean for a data set

Determine the median for a data set

Determine the mode for a data set

Determine the midrange for a data set

Interpret graphs, tables, and stem-and-leaf plots to be able to find the mean, median, mode and midrange

Understand concepts involving measures of central tendency

Section 12.3 Measures of Dispersion (32)

Determine the range for a data set

Find the mean, deviation from the mean, and sum of deviations

Determine the standard deviation for a data set

Understand concepts involving mean, range, and standard deviation

Section 12.4 The Normal Distribution (44)

Find scores at a specified standard deviation from the mean

Use the 68–95–99.7 Rule

Convert a data item to a z -score

Solve applied problems involving normal distributions

Understand concepts involving the normal distribution

Section 12.5 Percentiles and z-Scores (19)

Understand percentiles and quartiles

Solve applied problems involving normal distribution

Chapter 14: Graph Theory

Section 14.1 Graphs, Paths, and Circuits (43)

Understand relationships in a graph

Model relationships using graphs

Understand and use the vocabulary of graph theory

Understand concepts involving graph theory

Section 14.2 Euler Paths and Euler Circuits (38)

Understand the definitions of Euler path and Euler circuit

Use Euler's Theorem

Use Fleury's Algorithm to find possible Euler paths and Euler circuits

Solve problems using Euler's Theorem and Fleury's Algorithm

Understand concepts involving Euler paths and Euler circuits

Section 14.3 Hamilton Paths and Hamilton Circuits (33)

Understand the definitions of Hamilton paths and Hamilton circuits

Find the number of Hamilton circuits in a complete graph

Understand and use weighted graphs

Use the Brute Force Method to solve traveling salesperson problems

Use the Nearest Neighbor Method to approximate solutions to traveling salesperson problems

Understand concepts involving Hamilton paths and Hamilton circuits

Section 14.4 Trees (31)

Understand the definition and properties of a tree

Find a spanning tree for a connected graph

Find the minimum spanning tree for a weighted graph

Solve applications using properties of a tree