MATH 100 + MATH 10A OUTLINE SURVEY OF COLLEGE MATH

TEXT: Mathematical Ideas, 15th Edition, Miller/Heeren/Hornsby/Heeren.

Approved: November 2024	Effective: Fall 2025	
MATERIAL TO BE COVERED	SECTIONS FROM TEXT	RECOMMENDED TIME LINE
Math 100 Topics: Problem Solving Inductive and deductive reasoning, problem solving with patterns, problem solving strategies, calculating, estimating and reading graphs.	1.1 - 1.4	Math 100: 5 hours
Math 10A Support Topics: Additional support for problem solving, inductive and deductive reasoning, problem solving with patterns, problem solving strategies, calculating, estimating and reading graphs.		Math 10A: 4 hours
Math 100 Topics: Set Theory Basic properties of sets, subsets, set operations, applications of sets, infinite sets, Venn diagrams ^[1] .	2.1 - 2.4	Math 100: 6 hours
Math 10A Support Topics: Additional support for basic properties of sets, subsets, set operations, applications of sets, infinite sets, Venn diagrams.		Math 10A: 4 hours
Math 100 Topics: Logic Logic statements and quantifiers, truth tables and applications, the conditional and the biconditional, the conditional and related statements, arguments, Euler diagrams.	3.1 - 3.6	Math 100: 7 hours
Math 10A Support Topics: Additional support for logic statements and quantifiers, truth tables and applications, the conditional and the biconditional, the conditional and related statements, arguments, Euler diagrams.		Math 10A: 4 hours
Math 100 Topics: Counting Counting by systematic listing, using the Fundamental Counting Principle, using permutations and combinations, using Pascal's Triangle, counting problems involving "not" and "or".	10.1 - 10.5	Math 100: 5 hours
Math 10A Support Topics: Additional support for counting by systematic listing, using the Fundamental Counting Principle, using permutations and combinations, using Pascal's Triangle, counting problems involving "not" and "or".		Math 10A: 4 hours
Math 100 Topics: Probability Basic probability concepts, events involving "not" and "or", conditional probability, events involving "and", binomial probability, expected values.	11.1 - 11.5	Math 100: 6 hours
Math 10A Support Topics: Additional support for basic probability concepts, events involving "not" and "or", conditional probability, events involving "and", binomial probability, expected values.		Math 10A: 4 hours

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Math 100 Topics: Statistics Visual displays of data, measures of central tendency, measures of dispersion, measures of position, the Normal Distribution.	12.1 - 12.5	Math 100: 6 hours
Math 10A Support Topics: Additional support for visual displays of data, measures of central tendency, measures of dispersion, measures of position, the Normal Distribution.		Math 10A: 4 hours
Math 100 Optional Topics (at least TWO of the following must be covered)		
Historical Numeration Systems	4.1 or 4.2	
Arithmetic in Different Bases	4.4 or 4.5	
Modular Arithmetic	E.8-E.16	Math 100:
Non-Euclidean Geometry and Topology	9.7	4.5 hours
Chaos and Fractal Geometry	9.8	
Graph theory	14.1	
Voting	15.1-15.2	
Apportionment	15.3-15.4	
Math 10A Support Topics: Additional support for at least two optional topics selected by instructor.		Math 10A: 3.5 hours

[1] Extra time allotted to complete Venn diagram packet located on department website with department course outlines.

All hours listed are face-time.

2-unit class: hours total 30 (15 x 2 hours) – outline includes 2.5 hours for a final exam during the 15th week 3-unit class: hours total 42.5 (15 x 2 hours 50 minutes) – outline includes 3 hours for exams

- Math 100: The outline allows 3 hours for exams (excluding the 2.5-hour final exam).
- Math 10A: The outline allows 0 hours for exams. Exams in the support course are at the discretion of the professor.

Math 10A Instructor Notes:

- Math 10A is a 15-week course. The corequisite course does not meet during final exam week.
- Corequisite courses are Pass/No Pass grading.
- Worksheets for some support topics are available online at <u>https://mtsac.instructure.com/courses/33990/files/</u>
- Math 10A is not subject to department grading policy.
- Pearson MyLab is available as an instructor resource and student resource.
- Math Department Policy can be found at: <u>https://mtsac.instructure.com/courses/33990/files?preview=8920380</u>

Submitted by:

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