*Approved: April 2023 Effective: Fall 2023*

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| **MATERIAL TO BE COVERED** | **SECTIONS FROM TEXT** | **RECOMMENDED TIME LINE** |
| **Math 100 Topics: Problem Solving**  Problem solving, inductive and deductive reasoning, problem solving with patterns, problem solving strategies, calculating, estimating and reading graphs.  **Math 10A Support Topics:** Number sense, calculator support, critical thinking, and graph analysis. Additional time with deductive/inductive reasoning. | 1.1 - 1.4 | **Math 100:**  5 hours  **Math 10A:**  3 hours |
| **Math 100 Topics: Set Theory**  Basic properties of sets, subsets, set operations, applications of sets, infinite sets, Venn diagrams.  **Math 10A Support Topics:** Symbols and terminology, set operations including intersection and union of sets. Additional time with applications of Venn diagrams (surveys and data analysis). | 2.1 - 2.4 | **Math 100:**  5 hours  **Math 10A:**  3.5 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.  **Math 10A Support Topics:** Converse, inverse, contrapositive, and conditional statements. Additional time with truth tables. | 3.1 - 3.6 | **Math 100:**  7 hours  **Math 10A:**  4 hours |
| **Math 100 Topics: Conversion**  Conversion between number bases.  **Math 10A Support Topics:** Additional time with binary, octal, and hexadecimal base systems as used in computer applications. | 4.4 | **Math 100:**  1.5 hours  **Math 10A:**  1 hour |
| **Math 100 Topics: Modeling**  Linear functions, graphs, applications, and models.  **Math 10A Support Topics:** Rectangular coordinate system, intercepts, slope, average rate of change, parallel and perpendicular lines. Additional time with relations, functions, function notation and models. | 8.3-8.4 | **Math 100:**  2.5 hours  **Math 10A:**  3 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".  **Math 10A Support Topics:** Tree diagrams, problem solving. Additional time with counting, permutations, combinations, and binomial expansions. | 10.1 - 10.5 | **Math 100:**  4.5 hours  **Math 10A:**  3 hours |
| **Math 100 Topics: Probability**  Basic probability concepts, events involving "not" and "or", conditional probability: events involving "and", binomial probability, expected values.  **Math 10A Support Topics:** Calculator support, concepts and properties of probability. Additional time with conditional probability, binomial probability, and expected values. | 11.1 - 11.5 | **Math 100:**  5 hours  **Math 10A:**  4 hours |
| **Math 100 Topics: Statistics**  Visual displays of data, measures of central tendency, measures of dispersion, measures of position, the Normal Distribution.  **Math 10A Support Topics:** Basic statistical concepts, frequency distributions, graph analysis, standard deviation, z-score, and the normal distribution. Additional time with interpreting results, percentiles, and discrete and continuous random variables. | 12.1 - 12.5 | **Math 100:**  5 hours  **Math 10A:**  4 hours |
| **Math 100 Optional Topics (at least TWO of the following must be covered)**  Historical numeration systems  The Fibonacci Sequence and the Golden Ratio  Quadratic functions, graphs and models  Exponential and logarithmic functions, graphs and models  Non-Euclidean geometry and topology  Chaos and fractal geometry  Graph theory  Apportionment and voting  **Math 10A Support Topics:** Additional time to review background knowledge required to understand the optional topics chosen. | 4.1-4.2  5.5  8.5  8.6  9.7  9.8  14.1-14.4  15.1-15.4 | **Math 100:**  5 hours  **Math 10A:**  3 hours |

* All hours listed are face-time; i.e. breaks are administered by the instructor separately and are in addition to the hours listed.

2-unit class: hours total 30 (15 x 2 hours) 0 hours subtracted for exams

3-unit class: hours total 42.5 (15 x 2 hours 50 minutes) – 4 hours for exams + 2.5 hour final exam

* Math 100: The outline allows for 4 hours of exams excluding the 2.5-hour final exam
* Math 10A: The outline does not include time for exams. Exams in the support course are at the discretion of the professor.
* Math 10A is a 15-week course. The corequisite course does not meet during finals week.
* Corequisite courses are Pass/No Pass grading.

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**Math 10A Instructor Notes:**

* Worksheets for some support topics are available online at <https://mtsac.instructure.com/courses/33990/files/>
* 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: <https://mtsac.instructure.com/courses/33990/files?preview=8920380>

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