COURSE SYLLABUS

Syllabus for: MATH 1010  Math for General Studies

Former Course and Title: Mat 1260 Contemporary Mathematics

Former Quarter Course(s): MAT 126 and MAT 127 Contemporary Mathematics I, II

Catalog Description:
This course is a study of problem solving techniques using sets and logic, equations, geometry, functions, probability and statistics, and math of consumer finances. Additional topics from the history of mathematics, trigonometry, calculus, and graphing applications are included.

Credit Hours: 3 sem hrs  Contact Hours: 3 hrs/wk  Lab Hours: 0

Prerequisite(s): Documented eligibility for collegiate mathematics; one high school credit each in Algebra I and Algebra II.

Required Text(s): (1) Mathematics Smith           12th Ed.       Brooks Cole (Thomson)

Required Supplies/Material(s): Scientific calculator or graphing calculator

Recommended Supplementary Material(s):

Student Group for Whom Course is Required/Intended:
This course satisfies the mathematics requirement for the following emphases under the University Parallel major: art, communications, English, general studies, geography, health and physical education, history, political science, pre-law, recreation, social science, social work, and sociology.
SYLLABUS: MATH 1010, Math for General Studies

GOALS

GOALS: These should be broadly stated, measurable learner outcomes expected with the completion of the course; use additional sheet(s) if necessary.

To utilize and reinforce algebra skills in new problem solving situations

To explore topics from the history of mathematics integrating math discoveries with the development of man

To acquaint student with various non-algebraic topics in mathematics

To make mathematics relevant to the liberal arts student

OBJECTIVES

OBJECTIVES: These should be specifically stated, measurable learner outcomes to be met throughout the course; use additional sheet(s) if necessary.

Through the study of MATH 1010, a student will be able to:

1. Apply laws of deductive logic to determine validity of arguments.
2. Use symbolic logic with statements and truth tables.
3. Compare and contrast the Hindu-Arabic number system with ancient systems of numeration.
4. Convert decimal numerals to other bases and numerals in other bases to decimal numerals.
5. Identify subsets of the real number system, distinguish field properties for the various subsets, and do operations for numbers in the subsets.
6. Use prime factorizations to find least common multiple and greatest common factor of natural numbers.
7. Identify characteristics of polygons.
8. Use Pythagorean Theorem and basic trigonometry ratios to solve right triangles.
9. Compute perimeters, areas, and volumes for two- and three-dimensional figures.
10. Compare, contrast, and convert English and metric measurements of length, weight, and capacity, and temperature.
11. Apply exponential and logarithmic equations to real world problems.
12. Utilize formulas to calculate simple and compound interest and expected values of annuities.
13. Utilize formulas to calculate monthly payment amounts and total interest.
14. Identify sequences as arithmetic, geometric, or Fibonacci and find next terms.
15. Determine unions, intersections, and complements of sets.
16. Use Venn diagrams to solve problems, including survey problems.
17. Calculate probability and odds of particular events.
18. Use permutations, combinations, and the fundamental counting principle to solve application problems.
SYLLABUS: MATH 1010, Math for General Studies

OBJECTIVES (continued)

19. Use bar, line, and circle graphs to depict and interpret data.
20. Prepare frequency distributions to organize data.
21. Calculate mean, median, and mode for a set of data.
22. Calculate range, standard deviation, and variance for a set of data.
23. Use the normal distribution to solve application problems.
**SYLLABUS:** MATH 1010, Math for General Studies

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## SUGGESTED EVALUATION PLAN

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<tr>
<th>TASK</th>
<th>WEIGHT</th>
<th>OBJECTIVES</th>
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<td>Test I</td>
<td>100 points</td>
<td>1-2</td>
</tr>
<tr>
<td>Test II</td>
<td>100 points</td>
<td>3-6</td>
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<tr>
<td>Test III</td>
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<tr>
<td>Test IV</td>
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<td>11-14</td>
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<tr>
<td>Test V</td>
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<td>15-18</td>
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<tr>
<td>Final Examination</td>
<td>200 points</td>
<td>1-23</td>
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## FINAL GRADING PLAN

Based Upon Percentages

- **A =** 630-700 points or 90-100%
- **B =** 560-629 points or 80-89%
- **C =** 490-559 points or 70-79%
- **D =** 420-489 points or 60-69%
- **F =** 0-419 points or 0-59%

**Additional Comments:** Homework and quizzes and/or a short research paper could be used in determining the final grade. Attendance may be used as an incentive for dropping one test grade.
# SYLLABUS: MATH 1010, Math for General Studies

## INSTRUCTIONAL SCHEDULE

for

MATH 1010 - Math for General Studies

### Course Number and Name

<table>
<thead>
<tr>
<th>Objective</th>
<th>Week Numbers</th>
<th>Content to be Covered</th>
<th>Student Assignments/Supplementary Material(s)</th>
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<tr>
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<td></td>
<td>Reasoning</td>
<td>Problem Set 1.2</td>
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<td>16</td>
<td>Venn Diagrams</td>
<td>Problem Set 2.1</td>
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<tr>
<td>II.</td>
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<td>Problem Set 2.2</td>
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<td></td>
<td>Applications of Sets</td>
<td>Problem Set 2.3</td>
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<tr>
<td>III.</td>
<td>1,15,16,2</td>
<td>Deductive Reasoning</td>
<td>Problem Set 3.1</td>
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<td></td>
<td>Truth and Logic</td>
<td>Problem Set 3.2</td>
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<td>Fallacies</td>
<td>Problem Set 3.4</td>
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<td>IV.</td>
<td>1,2,16,1</td>
<td>Test # 1</td>
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<tr>
<td></td>
<td>3,4</td>
<td>Numeration Systems</td>
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<td>Numeration Systems/Non-Decimal Bases</td>
<td>Problem Sets 4.2/4.3</td>
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<td>Non-Decimal Bases / Binary System</td>
<td>Problem Sets 4.3/4.4</td>
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<td>V.</td>
<td>4,5,6</td>
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<td>Real Numbers</td>
<td>Problem Sets 5.3/5.4</td>
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<td>Real Numbers</td>
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<td>VI.</td>
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<td>Polygons</td>
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<td>Triangles</td>
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<td></td>
<td>Triangles</td>
<td>Problem Set 7.4</td>
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<td></td>
<td>Right-Triangle Trigonometry</td>
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<tr>
<td>VII.</td>
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<td>Right-Triangle Trigonometry</td>
<td>Problem Sets 7.5</td>
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<td>Perimeter / Area</td>
<td>Problem Sets 9.1/9.2</td>
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<td></td>
<td>Surface Area / Volume / Capacity</td>
<td>Problem Set 9.3</td>
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<tr>
<td>VIII.</td>
<td>10,11</td>
<td>Metrics / Unit Conversions</td>
<td>Problem Sets 9.4/9.5</td>
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<td>Test #3</td>
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<td>Applications of Logarithms</td>
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<td>Interest</td>
<td>Problem Set 11.1</td>
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**MATH 1010** - Math for General Studies

### INSTRUCTIONAL SCHEDULE for

**MATH 1010 - Math for General Studies**

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<td>X.</td>
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<td>Problem Set 11.2</td>
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<td>Problem Set 11.5</td>
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<td>Problem Sets 12.1/12.2</td>
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<td></td>
<td>Counting Techniques</td>
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<td>Problem Set 12.3</td>
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<td>Probability / Expectation</td>
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<td>Problem Sets 13.1/13.2</td>
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<tr>
<td>XIII.</td>
<td>17,19,20</td>
<td>Probability Models</td>
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<td>Test #5</td>
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<tr>
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<td>Normal Curve</td>
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<td>Problem Set 14.3</td>
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<td>XV.</td>
<td>1-23</td>
<td>Final Exam</td>
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