Mathematics 185

Precalculus (5)
(Effective Fall 2018)

Prerequisite: Two units of high school algebra, one unit of high school geometry, and appropriate mathematics placement. Credit may not be received for MATH 100-110 or MATH 140 or MATH 170 after completing MATH 185 and credit may not be received for MATH 185 after completing MATH 100-110 or MATH 140 or MATH 170.


Notes:
1. All students in this course will take the Department of Mathematics and Statistics common Final Exam
2. This course requires a graphing calculator. The department recommends a calculator of the TI-83, TI-84 series for this course. Computer algebra systems are prohibited. A TI-Nspire may only be used with a TI-84 faceplate.
3. Some instructors may require MyMathLab, a computer/internet supplement to the textbook.

General Education: The faculty of UT Martin have included this as a general education course with the following course goal and student learning outcomes.

Curriculum Goals: The purpose of the Mathematics requirement is to teach students to organize, evaluate and solve problems using both abstract and quantitative approaches. Courses in this area will enable students to communicate using the language of mathematics.

Student Learning Outcomes:

  a. Students will use appropriate notation and vocabulary to communicate mathematics.
  b. Students will use symbolic and numerical methods to perform calculations.
  c. Students will solve problems with real-world applications.

Teaching Objectives: The student will:

  1. Work with the basic concepts of graphs and functions.
  2. Determine the graphs and zeros of polynomial and rational functions.
  3. Understand and apply logarithmic and exponential functions and equations.
  4. Define, use, and graph the trigonometric functions and the inverse trigonometric functions.
  5. Use trigonometric identities and solve trigonometric equations
  6. Apply trigonometric functions in the solving of triangles and in other situations.
  7. Work with the basic equations and graphs and rotation of the conics.
  8. Solve systems of equations by several methods and solve systems of inequalities.
  9. Understand the basic definitions and operations of matrices and determinants and their applications.
Outline:

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title (Sections)</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Functions and Their Graphs (1–5)</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Linear and Quadratic Functions (1–3)</td>
<td>2</td>
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<tr>
<td>5</td>
<td>Polynomial and Rational Functions (1–5)</td>
<td>6</td>
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<tr>
<td>6</td>
<td>Exponential and Logarithmic Functions (1–8)</td>
<td>7</td>
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<tr>
<td>12</td>
<td>Systems of Equations and Inequalities (1–8)</td>
<td>7</td>
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<tr>
<td></td>
<td>Midterm</td>
<td>1 or 2</td>
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<tr>
<td>7</td>
<td>Trigonometric Functions (1–8)</td>
<td>9</td>
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<td>8</td>
<td>Analytic Trigonometry (1–7)</td>
<td>8</td>
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<tr>
<td>9</td>
<td>Applications of Trigonometry (1–5)</td>
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<tr>
<td>10</td>
<td>Polar Coordinates; Vectors (3–5)</td>
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<tr>
<td>11</td>
<td>Analytic Geometry (1–5)</td>
<td>5</td>
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<td></td>
<td>One period tests</td>
<td>9</td>
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<tr>
<td></td>
<td>Total days</td>
<td>69 or 70</td>
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</tbody>
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Disability Services: The University of Tennessee provides reasonable accommodations (academic adjustments and auxiliary aids) to ensure equal access to educational content and university programs for students with disabilities. Any student eligible for and requesting accommodations due to a disability must provide instructors with a letter of accommodation from Disability Services. For additional information, please contact the Disability Services office at 209 Clement Hall, (731) 881-7605.

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1 Whether a teacher spends one or two days for the Mid Term will depend on the individual teacher’s situation.

2 In Chapter 11, the polar form of conics should be left out.