Southwest High School
AP Calculus AB/UWGB Math 202 Calculus & Analytic Geometry I

Instructor
Tina Dumoulin        Email: tmdumoulin@gbaps.org       Phone: 492-2650

Textbook

Calculators
A graphing calculator is required. If a student does not have a graphing calculator, a TI-83 Plus will be provided for use in class.

Homework
- Homework is assigned daily and is due the 2nd day after it is assigned. It is your responsibility to ask any questions you may have prior to the due date.
- Late homework must be turned in within one week of the end of the unit and earns a 1-2 point deduction.
- When absent, it is the student’s responsibility to complete the assignment, correct it, and turn it in within 2 days.

Grading
Quizzes with AP-type questions will be given regularly to check that students are keeping up with the basic skills and ideas of the course. Tests will be given once or twice per textbook chapter or unit. Following the AP style, some assessments will be non-calculator. If you are absent for a test or quiz, you must make it up within one week of your return or see me to make other arrangements. An alternate form of the test or quiz may be given. If you are absent the day homework is collected, you are expected to turn in your work upon your return or see me to make other arrangements. Homework, quizzes, and tests will comprise 80% of the semester grade. The semester exam accounts for the remaining 20%.

Grading Scale

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<thead>
<tr>
<th>Grade</th>
<th>Range:</th>
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<tbody>
<tr>
<td>A</td>
<td>93-100</td>
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<td>A-</td>
<td>90-92</td>
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<td>B+</td>
<td>87-89</td>
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<td>B</td>
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<td>B-</td>
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<td>C+</td>
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<td>C</td>
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<td>D+</td>
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<td>D</td>
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<td>D-</td>
<td>60-62</td>
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<td>F</td>
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**UWGB grade from average of two HS semester grades:**
- A (92-100)
- AB (89-91)
- B (82-88)
- BC (79-81)
- C (70-78)
- D (60-69)
- F (<60)
Outline of Topics

Chapter P: Preparation for Calculus (Weeks 1-2)
  a. Functions and Their Graphs
  b. Trigonometry
  c. Inverse Functions
  d. Exponential and Logarithmic Functions

Chapter 1: Limits and Their Properties (Weeks 2-4)
  a. A preview of Calculus
  b. Finding Limits Graphically and Numerically
  c. Evaluating Limits Analytically
  d. Continuity and One-Sided Limits
  e. Infinite Limits

Chapter 2: Differentiation (Weeks 5-10)
  a. The Derivative and the Tangent Line Problem
  b. Basic Differentiation Rules and Rates of Change
  c. Product and Quotient Rules and Higher-Order Derivatives
  d. The Chain Rule
  e. Implicit Differentiation
  f. Derivatives of Inverse Functions
  g. Related Rates
  h. Newton’s Method

Chapter 3: Applications of Differentiation (Weeks 11-15)
  a. Extrema on an Interval
  b. Rolle’s Theorem and the Mean Value Theorem
  c. Increasing and Decreasing Functions and the First Derivative Test
  d. Concavity and the Second Derivative Test
  e. Limits at Infinity
  f. L’Hopital’s Rule
  g. Curve Sketching
  h. Optimization Problems
  i. Differentials

Chapter 4: Integration (Weeks 16,17,20-24)
  a. Antiderivatives and Indefinite Integration
  b. Area
  c. Riemann Sums and Definite Integrals
  d. The Fundamental Theorem of Calculus
  e. Integration by Substitution
  f. Numerical Integration
  g. The Natural Logarithmic Function: Integration
  h. Inverse Trigonometric Functions: Integration

Chapter 5: Differential Equations (Weeks 25-26)
  a. Slope Fields
  b. Differential Equations: Growth and Decay
  c. Differential Equations: Separation of Variables

Chapter 6: Applications of Integration (Weeks 26-28)
  a. Area of Region Between Two Curves
  b. Volume: The Disk Method and Volume by Cross-sectional area
  c. Volume: The Shell Method