Grading Procedure: Points obtained on unit exams, problem sets, quizzes, and the final exam will determine the final grade in this course. There is NO extra credit.

The grading scale is as follows: 90-100% for an A, 80-89% for a B, 70-79% for a C, 55-69% for a D, and 54% or below is a Fail.

The points will be distributed as follows:

- Unit exams – 100 points possible for each exam (approximately 60% of final grade)
  All exams, to be completed in a bluebook purchased by the student for each exam, are closed book/closed notes. There is no makeup given on a missed exam; however, an exam may be taken earlier if student anticipates being absent on a scheduled exam date. If an exam (only one exam is allowed) should be missed, the percentage score from the final exam will be used in place of the missing score; any other exam missed after that will receive a score of zero.

- Quizzes – 5 to 10 points possible on each and will be given at instructor’s discretion. No makeup given on missed quizzes.

- Homework – 5 to 9 points possible for each problem set. The problem set will consist of all assignments for a chapter and will be stapled and turned in on the day of the exam at the beginning of the hour. On the average, a minimum of two hours should be spent on homework for each lecture hour. Not turning in homework could result in a student’s final grade being lowered by one grade. (Quizzes & homework will be approximately 10% of final grade)

- Final exam – about 30% of final grade


Calculator: Calculators will not be permitted on exams and quizzes.

Attendance: It is absolutely imperative that students are in class everyday that the class meets. Five unexcused absences will put a student in jeopardy of being dropped from the class. Aside from the circumstances under which you may be dropped by the instructor, it is your responsibility as a student to withdraw from class if you do not intend to complete it. Students must not expect faculty to initiate withdrawal procedures for them. If you wish to drop this class, you may do so through Corsair Connect. Students may process a drop for themselves through 75% of the class. Data regarding the withdrawal parameters are provided within your Corsair Connect account.

Academic Honesty: All students are expected to abide by the Code of Academic Conduct; that is, students will turn in their own work (homework, exams, and quizzes). Any student caught cheating, in addition to receiving a score of zero on his/her work, will be in danger of being dropped from the class as well as have a Dishonesty Report placed in his/her academic file.

Course Content:

<table>
<thead>
<tr>
<th>Percentage of Term</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>8%</td>
<td>Review topics from precalculus (algebra functions, trigonometry, sequences, series)</td>
</tr>
<tr>
<td>13%</td>
<td>Limits and continuity (epsilon-delta, limits, one-sided limits, limits involving infinity, definition &amp; properties of continuous functions)</td>
</tr>
<tr>
<td>21%</td>
<td>Derivatives (definition, techniques of differentiation, derivatives of rational &amp; trig functions, Chain Rule, differentials &amp; linearization, implicit differentiation, tangent lines, rates of change)</td>
</tr>
<tr>
<td>23%</td>
<td>Applications of the derivative (extreme values of functions, the Mean Value Theorem, the first and second derivative tests, curve sketching, optimization, rectilinear motion, Newton’s Method)</td>
</tr>
<tr>
<td>17%</td>
<td>Integrals (antiderivatives, indefinite integrals, definite integral, Fundamental Theorem of Calculus, Mean Value Theorem for integrals, numerical integration)</td>
</tr>
<tr>
<td>14%</td>
<td>Applications of the definite integral (area; volumes by slicing, disks, washers, cylindrical shells; arc length; work)</td>
</tr>
<tr>
<td>4%</td>
<td>Review for final exam</td>
</tr>
</tbody>
</table>
**Student Learning Outcomes:** The knowledge, skills, or abilities that the student will demonstrate by the end of the semester.

- Given an algebraic or trigonometric function, students will evaluate and apply limits and prove basic limit statements.
- Given an algebraic or trigonometric function, students will differentiate the function and solve application problems involving differentiation.
- Given an algebraic or trigonometric function, students will integrate the function and solve application problems involving integration.

**Prerequisite Skills:** To ensure that a student will have the most successful experience in this class, it will be assumed that the student can (prior to enrolling in Math 7) perform with reasonable accuracy all of the following:

- Apply fundamental concepts in algebra over real and complex numbers.
- Expand a binomial using the Binomial Theorem.
- Analyze a function (polynomial, exponential, logarithmic, and trigonometric) to determine its domain, range, and inverse.
- Find roots of polynomials to graph a function and solve corresponding equation.
- Graph various functions (polynomial, exponential, logarithmic, trigonometric, greatest integer, absolute value, square root, rational, piecewise defined).
- Use a calculator in study of exponents and logarithm and solve corresponding equations.
- Have memorized or be able to derive quickly basic definitions and identities of trigonometry to solve application problems.
- Recognize series and sequences.
- Recognize and graph shifted conics.

**Course Objectives:** Upon completion of this course, students will be able to

- Evaluate limits using basic limit theorems and the epsilon-delta definition.
- State and apply the definition of continuity to determine a function’s points of continuity and discontinuity
- Differentiate elementary functions using basic derivative theorems and the definition of the derivative
- Integrate elementary functions using basic integral theorems and the definition of the definite integral
- Approximate definite integrals using numerical integration techniques (trapezoidal and Simpson’s rules)
- Solve derivative application problems including optimization, related rates, linearization, curve sketching, and rectilinear motion
- Solve integral application problems including area, volume, arc length, work
- State and apply the Mean Value Theorems, Extreme Value Theorem, Intermediate Value Theorem, Fundamental Theorem of Calculus, and Newton’s Method