MATH 2414 Syllabus
Brookhaven College

Instructor Information
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Division Office and Phone: Science, Mathematics, and Engineering.
Room K224. 972-860-4750

Course Information
Course Title: Calculus II
Course Number: MATH 2414
Section Number: 23002
Semester/Year: Spring 2020
Credit Hours: 4
Class Meeting Time/Location: TR 10:30a in X1006
Certification Date: February 3, 2020
Last Day to Withdraw: April 16, 2020

Course Prerequisites
Required: MATH 2413 or equivalent.

Course Description
This course is a study of differentiation and integration of transcendental functions; parametric equations and polar coordinates; techniques of integration; sequences and series; improper integrals. (4 Lec.)
Coordinating Board Academic Approval Number 2701016019
Student Learning Outcomes
Upon successful completion of this course, students will:
1. Use the concepts of definite integrals to solve problems involving area, volume, work, and other physical applications.
2. Use substitution, integration by parts, trigonometric substitution, partial fractions, and tables of anti-derivatives to evaluate definite and indefinite integrals.
3. Define an improper integral.
4. Apply the concepts of limits, convergence, and divergence to evaluate some classes of improper integrals.
5. Determine convergence or divergence of sequences and series.
6. Use Taylor and Maclaurin series to represent functions.
7. Use Taylor or Maclaurin series to integrate functions not integrable by conventional methods.
8. Use the concept of polar coordinates to find areas, lengths of curves, and representations of conic sections.

Texas Core Objectives
The College defines essential knowledge and skills that students need to develop during their college experience. These general education competencies parallel the Texas Core Objectives for Student Learning. In this course, the activities you engage in will give you the opportunity to practice two or more of the following core competencies:

1. **Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. **Communication Skills** - to include effective development, interpretation, and expression of ideas through written, oral, and visual communication
3. **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
4. **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
5. **Personal Responsibility** - to include the ability to connect choices, actions, and consequences to ethical decision-making
6. **Social Responsibility** - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

Required Course Materials
TI-Graphing Calculator Required. TI-84 Plus Calculator Recommended. (no TI-NSpire, No TI-89, No TI-92) No Casio calculators may be utilized on tests.

Note: A student of this institution is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Graded Work
The tables below provide a summary of the graded work in this course and an explanation of how your final course grade will be calculated.

Summary of Graded Work

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>20%</td>
</tr>
<tr>
<td>4 Exams</td>
<td>80%</td>
</tr>
</tbody>
</table>

**TOTAL: 100%**

For students that miss no more than one class this semester, I will drop your lowest quiz grade. Note: coming in late and leaving early count as partial absences (3 partial absences = 1 full absence).

Final Grade

<table>
<thead>
<tr>
<th>Percentages</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
</tr>
<tr>
<td>80-89%</td>
<td>B</td>
</tr>
<tr>
<td>70-79%</td>
<td>C</td>
</tr>
<tr>
<td>60-69%</td>
<td>D</td>
</tr>
<tr>
<td>0-59%</td>
<td>F</td>
</tr>
</tbody>
</table>

Grade Reports
Final grade reports are not mailed to students. You may obtain your final grades online at [https://econnect.dcccd.edu/](https://econnect.dcccd.edu/). From the student menu, select “My Grades” under “My Personal Information.” If you are not already logged in, you will be prompted to do so.
Select the grade type you wish to review. Press the submit button and all grades for the selected grade type will be displayed.

**Late Work Policy**

In general, late work will not be accepted. If a student has a documented reason for missing a test deadline and communicates with the professor prior to the test deadline, the professor will work with the student to determine a possible extension on a maximum of one test. A student who fails to communicate with the instructor prior to the test deadline will not receive any extensions. An extension is granted at the discretion of the instructor with approved documentation from the student.

**Other Course Policies**

Incomplete grades are given when an unforeseen emergency prevents a student from completing the work in a course after the Drop date. To be considered for an incomplete grade, the student must be passing at the time of the Drop date. The division Dean must approve all “I” grades.

**Classroom Expectations**

The theme of this class is respect. I will treat you with respect and I expect the same treatment from you. In addition, I ask that you also be respectful to classmates. This means that you are not to interrupt your classmates or interrupt me when I am talking. Disparaging comments about classmates or about me will not be tolerated. Furthermore, cell phones ringing during class, text messaging during class, and arriving late to class are examples of rude and disrespectful behaviors. You are to arrive on time to class and turn off cell phones or put them on vibrate when entering the classroom. If you receive an emergency call, please step outside of the classroom to take the call. Text messaging is not allowed during class time.

- Engaging with your smart phone is not allowed during class time as it is a disruption to you and the instructor. You will be asked to leave class for the day if seen doing so.
- If you are going to come to class you are expected to be in your seat at 10:30am. Excessive tardiness will not be tolerated as it is a disruption to the instructor and other students who show up on time. Students with excessive tardiness will be asked to remain in the hall until the one hour break, or drop the course.

Because disrespectful behaviors can sometimes become an issue, I’ve developed a policy that I will follow. Students who continue to display rude and disrespectful behaviors will be given a warning. If the behavior continues, students will be asked to leave the class. The student must meet with me before he/she can return to class.

*We, the Math Department of BHC, take issues of dishonesty very seriously. If a student is caught violating any policy of the Testing Center, or an instructor’s*
own policy for their particular class, the following consequences will be enforced: The minimum penalty a student will receive is a zero for the assignment/exam and the maximum penalty will be to receive an F for the course and/or academic suspension.

Institutional Policies
Institutional Policies relating to this course can be accessed using the link below. These policies include information about tutoring, Disabilities Services, class drop and repeat options, Title IX, and more.

Brookhaven Institutional Policies (http://www.brookhavencollege.edu/syllabipolicies)

Tentative Course Schedule

<table>
<thead>
<tr>
<th>DAY</th>
<th>SECTION (S) OR ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.1 Integration by Parts</td>
</tr>
<tr>
<td>2</td>
<td>6.2 Trigonometric Integrals and Substitutions</td>
</tr>
<tr>
<td>3</td>
<td>6.3 Partial Fractions</td>
</tr>
</tbody>
</table>
| 4   | 6.4 Integration with Tables  
|     | 6.5 Approximate Integration |
| 5   | 6.6 Improper Integrals |
| 6   | Review Chapter 6 |
| 7   | Exam 1 |
| 8   | 7.1 Areas Between Curves  
|     | 7.2 Volumes |
| 9   | 7.3 Volumes by Cylindrical Shells |
| 10  | 7.4 Arc Length |
| 11  | 7.5 Area of a Surface of Revolution |
| 12  | 7.6 Applications to Physics & Engineering |
| 13  | Review Chapter 7 |
| 14  | Exam 2 |
| 15  | 8.1 Sequences |
| 16  | 8.2 Series |
| 17  | 8.3 The Integral and Comparison Tests |
| 18  | 8.4 Other Convergence Tests |
| 19  | 8.5 Power Series |
| 20  | 8.6 Representing Functions as Power Series |
|     | 8.7 Taylor and Maclaurin Series |
8.8 Applications of Taylor Polynomials

21 Review Chapter 8

22 Exam 3

23 9.1 Parametric Curves
   9.2 Calculus with Parametric Curves

24 9.3 Polar Coordinates

25 9.4 Areas & Lengths in Polar Coordinates

26 9.5 Conic Sections in Polar Coordinates

27 Review Chapter 9

28 Exam 4