A. COURSE INFORMATION

   Course number/section:  MATH 2414.005
   Class meeting time:    MWF 8:00-8:50 AM
   Class location:        OCNR 133
   Course Website:        bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

   Instructor:            Dr. Baohua Chen
   Office location:       CI 306
   Office hours:          TR 9:30 AM-12:00 PM
   Telephone:             361-825-6019
   E-mail:                baohua.chen@tamucc.edu
   Appointments:          Appointments outside of office hours are available by request

C. COURSE DESCRIPTION

   Catalog Description
   Integration, application of integration, especially to differential equations, sequences, series,
   Taylor polynomials and series. Contains a laboratory component.

D. PREREQUISITES/COREQUISITES

   Prerequisites: Math 2413 (Calculus I)

   Corequisites: Enrollment in lab MATH 2414-2XX.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

   Textbook
   WebAssign Access Card for Calculus, Multi-Term Courses.

   Software
   WebAssign access for homework assignments. Access code may be purchased through the WebAssign
   linked with the Blackboard. No class key is needed since instructor has uploaded the roster to put students in
   the registered class.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

   Assessment is a process used by instructors to help improve learning. Assessment is essential
   for effective learning because it provides feedback to both students and instructors. A critical
   step in this process is making clear the course’s student learning outcomes that describe what
   students are expected to learn to be successful in the course. The students learning outcomes
   for this course are listed below. By collecting data and sharing it with students on how well
   they are accomplishing these learning outcomes students can more efficiently and effectively
focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

Upon successful completion of this course, students should be able to:

1. Evaluate integrals by the Fundamental Theorem of calculus, substitution, integration by parts, trigonometric substitution, and by using trigonometric identities to simplify an integrand.

2. Compute the area between two curves, compute volumes and surface areas of solids of resolution, compute arc length.

3. Determine whether an integral is an improper integral and determine whether an improper integral converges.

4. Compute limits of sequences and series to determine convergence/divergence of a sequence.

5. Determine convergence/divergence of an infinite series using the integral, comparison, root or ratio test.

6. Determine the radius of convergence of power series; differentiate and integrate power series.

7. Represent a known function as a Taylor series; approximate a known function with a Taylor polynomial and determine the error involved.

8. Graph a parametric curve and compute the length of a parametric curve.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

Methods and activities for instruction include lecture by the instructor and participation by the students by doing problems in class.

- **Homework**: Homework will be assigned after each class through WebAssign. Any homework questions will be answered during office hours if time does not permit in class. On-campus free tutoring in CASA is another way of getting help with homework.

- **Test**: There will be three in-class tests. They are tentatively scheduled for
  
  Test 1: Wednesday, Sep. 18th (Chapter 6.1-6.5)
  Test 2: Monday, Oct. 14th (Chapter 7.1-7.5, 7.8)
  Test 3: Wednesday, Nov. 20th (Chapter 11.1-11.10)

- **Final Exam**: Friday, Dec. 6th (Chapters 6, 7, 11)

- **Lab**: Two labs per week. You will practice lecture-related questions; work on computer-based labs (Matlab) to learn programming the mathematics taught during lecture.

H. MAJOR COURSE REQUIREMENTS AND GRADING

Grades will be calculated by homework, test, exam and lab, according to the following percentages.
### ACTIVITY | % of FINAL GRADE
---|---
Test 1 | 10%
Test 2 | 15%
Test 3 | 15%
Final Exam | 30%
Homework | 10%
Labs | 20%

**Grading Scales:** A: 90–100%, B: 80–89.99%, C: 70–79.99%, D: 60–69.99%, F: 59.99%–

**Note:**
- No homework grades and no test grades get dropped.
- Labs are graded by the TA. One lowest lab score will be dropped.
- Final exam score will replace one of lower scores in tests (unless the final score is lower than two test scores)

### I. COURSE CONTENT/SCHEDULE

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<tr>
<th>Weeks</th>
<th>Topics</th>
<th>Sections</th>
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<td>Aug. 26</td>
<td>Review of Cal I</td>
<td>5.5</td>
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<tr>
<td>Sep. 2</td>
<td>Area between Curves</td>
<td>6.1</td>
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<td>Volumes of solids with known cross sections</td>
<td>6.2</td>
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<tr>
<td>Sep. 9</td>
<td>Volumes of solids of Revolution - disk method</td>
<td>6.3</td>
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<td>Average Value of a Function</td>
<td>6.5</td>
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<td>Sep. 16</td>
<td>Review and Test 1 (section 6.1-6.5)</td>
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<td></td>
<td>Trigonometry</td>
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<tr>
<td>Sep. 23</td>
<td>Integration by Parts</td>
<td>7.1</td>
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<td></td>
<td>Trigonometric Integrals</td>
<td>7.2</td>
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<td></td>
<td>Trigonometric Substitution</td>
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<td>Sep. 30</td>
<td>Division and partial fraction expansion</td>
<td>7.4</td>
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<td></td>
<td>Strategy for Integration</td>
<td>7.5</td>
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<td>Improper Integrals</td>
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<td>Oct. 7</td>
<td>Review</td>
<td>8.1</td>
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<td></td>
<td>Arclength</td>
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<td></td>
<td>Area of Surface of Revolution</td>
<td>8.2</td>
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<tr>
<td>Oct. 14</td>
<td>Review and Test2 (Chapter 7,8)</td>
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<td></td>
<td>Sequences Convergence and Divergence</td>
<td>11.1</td>
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<tr>
<td>Oct. 21</td>
<td>Series, Geometric series</td>
<td>11.2</td>
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<td></td>
<td>Integral test intuition Estimating infinite series Review</td>
<td>11.3</td>
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<td>Oct. 28</td>
<td>Comparison Tests</td>
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<td></td>
<td>Alternating Series</td>
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<tr>
<td>Nov. 4</td>
<td>Ratio and Root Tests for convergence and divergence</td>
<td>11.6</td>
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<td></td>
<td>Tests for convergence and divergence</td>
<td>11.7</td>
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<td></td>
<td>Power Series function representation using algebra</td>
<td>11.8</td>
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<tr>
<td>Nov. 11</td>
<td>Power series function representation using algebra Maclaurin</td>
<td>11.9</td>
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### Course Policies

**Attendance/Tardiness**
You are expected to attend every class session and arrive on time. All the absences will be considered “unexcused” unless you have an exceptional situation (e.g., documented illness, family situation), and you email the instructor about it within 24 hours. Excellent attendance records will help your grade in that borderline course-grade decisions will be influenced by these records.

**Late Homework Assignments**
Late assignments will not be accepted, unless exceptional circumstances prevent you from completing them. Extension of deadlines will be at the instructor’s discretion. Late assignments may result in partial or total loss of credit.

**Make-up Exams**
All absences from exams will be considered unexcused unless they are documented in advance as excusable with the instructor or as soon as possible in the case of emergencies. No credit will be awarded for missed exam resulting from unexcused absences. For an absence to be considered excused, the students must notify his or her instructor in writing (acknowledged email message is acceptable) prior to the date of absence if such notification is feasible. In cases where advance notification is not feasible (e.g. accident or emergency) the student must provide notification by the end of the second working day after the absence. **Without taking final exam, it will be an F for the semester grade regardless.**

**Make up test will be given once per student with appropriate documentation provided.** Please save the opportunity for the emergencies.

**Extra Credit**
There will be no extra credit for this course.

**Cell Phone Use**
Please silence phones before coming to class. If you need to take a call, please go outside the classroom. Any use of cell phone or wireless device during a test carries the presumption of cheating. A grade of zero will be awarded for that assignment for using a cell phone or wireless device.

**Food in Class**
Please do not eat during class. This can distract other from learning, and part of my job is to provide a class atmosphere that aids student learning.
K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including
the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

  If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.  http://disabilityservices.tamucc.edu/

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

**L. OTHER INFORMATION**

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

**GENERAL DISCLAIMER**

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.