A. COURSE INFORMATION

Course number/section: MATH 2415.001
Class meeting time: Lecture MW 12:00-1:53 PM
Class location: Lecture EN108
Course Website: bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Dr. Baohua Chen
Office location: CI 306
Office hours: MW 1:00-3:30 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

This course covers parametric equations, vectors, functions of two and three variables. It generalizes the materials from calculus I and II to functions of several variables and vector-valued functions. It builds towards the big theorems at the end: Green’s Theorem, Stokes’ Theorem and the Divergence Theorem

D. PREREQUISITES/COREQUISITES

Prerequisites: Math 2414 (Calculus II), Math 2413 (Calculus I).
Corequisites: Enrollment in lab MATH 2415-2XX.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Textbook


Software

WebAssign access is for homework assignment. 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 student 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. Graph a parametric curve
2. Convert between rectangular and polar coordinates
3. Calculate and use dot products and cross products of vectors
4. Give the equation of a plane in 3 dimensional space
5. Calculate derivatives and integrals of vector-valued functions
6. Calculate arc length for vector-valued functions
7. Match 3-D plots and contour plots of functions in 2 variables
8. Calculate and use partial derivatives
9. Calculate tangent planes to the graph of a function in two variables
10. Use the chain rule for functions in several variables
11. Take directional derivatives and determine gradient vectors
12. Determine minimum and maximum values of functions in several variables with or without constraints
13. Evaluate double and triple integrals over general regions
14. Use the change of variable formula for multiple integrals
15. Change the order of integration in multiple integrals
16. Evaluate line integrals using Green's theorem
17. Evaluate surface integrals using the Divergence Theorem
18. State and use Stokes’ Theorem

G. INSTRUCTIONAL METHODS AND ACTIVITIES

Methods and activities for instruction include: Lectures, participation by students solving problems in class and group activities

- **Homework:** Homework will be assigned each class through WebAssign. No homework in test weeks. 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 two in-class tests. They are tentatively scheduled for
  Test 1: Wednesday, June 12th (Sections 10.3, 10.4, Chapter 12 and section 14.1)
  Test 2: Monday, July 22th (Chapter 15)

- **Midterm Exam:** Monday, July 1st (Chapters 12, 14)
- **Final Exam:** Wednesday, August 7th (Chapters 12-16)

- **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.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td>15%</td>
</tr>
<tr>
<td>Test 2</td>
<td>15%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Labs</td>
<td>15%</td>
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</table>

Final grades will be assigned according to the following table:

**Percentage Grade**

- ≥ 90.0%         A
- ≥ 80.0%         B
- ≥ 70.0%         C
- ≥ 60.0%         D
- Below 60%       F

**Note:**
- No homework grades and no test grades get dropped.
- Labs are graded by the TA. Lab has its own syllabus whose policies supplement this syllabus.
- 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

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Sections</th>
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<tbody>
<tr>
<td>June 3</td>
<td>Syllabus, 10.3-10.4; 12.1-12.4</td>
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<tr>
<td>June 10</td>
<td>12.5-12.6, 14.1; Test1</td>
</tr>
<tr>
<td>June 17</td>
<td>14.2-14.4; 14.5-14.6;</td>
</tr>
<tr>
<td>June 24</td>
<td>14.7-14.8; Review</td>
</tr>
<tr>
<td>July 1</td>
<td>Midterm exam; 13.1-13.3</td>
</tr>
<tr>
<td>July 8</td>
<td>15.1-15.3; 15.4-15.5</td>
</tr>
<tr>
<td>July 15</td>
<td>15.6-15.8; Review</td>
</tr>
<tr>
<td>July 22</td>
<td>Test2; 16.1-16.3;</td>
</tr>
<tr>
<td>July 29</td>
<td>16.4-16.7; 16.8-16.9</td>
</tr>
<tr>
<td>August 5</td>
<td>Review; Final exam</td>
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</tbody>
</table>
Note: Changes in this course schedule may be necessary and will be announced to the class by the instructor. The assignments, quizzes and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. COURSE POLICIES

- **Attendance/Tardiness**
  Attendance is mandatory. Attendance will be checked in each class. All 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**
  In general, 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**
  There is no make-up for any tests, and final exam unless you could provide proper documentation from either medical doctors or any court orders. For an absence to be considered excused, student must notify his or her instructor in writing (acknowledged e-mail 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**
  Cell phone using is prohibited in any circumstances. Laptops, or any form of a new technology device is NOT allowed in the classroom during lecture and exam. 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, touching or clanking at a cell phone or wireless device.

- **Food in class**
  No food in class. This can distract others from learning, and part of my job is to provide a class atmosphere that aids student learning.

- **Participation**
  Participation is not part of the grade, but you learn more by interacting, than by watching passively.
K. COLLEGE AND UNIVERSITIY 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 (http://www.tamucc.edu/academics/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](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](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/](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.