Math 3204-51/Calculus IV/ Spring 2019  
Instructor: Dr. Dhruba Adhikari  
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Office: D-243

Classroom and Time:  
D-116  
TR 11:00 AM - 12:15 PM

Office Hours:  
TR 10:30--11:00AM, and by appointment (email)

Prerequisite:  
Math 2203 (Calculus III) with a grade of “C” or better

Textbook with WebAssign:  

Once you create your WebAssign account, please link it to the course from within KSU D2L Brightspace. WebAssign gives you free access for two weeks after the start of class (until Jan 21). To continue using WebAssign after that, either enter an access code (if already have it) or purchase access online. Please check out the link [http://www.webassign.net/manual/Student_Quick_Start_Guide_Brightspace.pdf](http://www.webassign.net/manual/Student_Quick_Start_Guide_Brightspace.pdf) for more information.

Course Description:  
This course is the fourth in the calculus curriculum and is concerned with the change of variables for integrals on two and three dimensional regions, line integrals, surface integrals, Green's theorem, and Stokes theorem. The analogue of Stokes’ theorem (the theorem of Gauss) for integrals of functions on three-dimensional parametric regions will also be studied.

Tentative material to be covered:

**Chapter 14: Multiple Integrals**
- 14.7: Triple Integrals Using Cylindrical Coordinates
- 14.8: Triple Integrals Using Spherical Coordinates
- 14.9: Change of Variables Using Jacobians

**Chapter 15: Vector Calculus**
- 15.1: Vector Fields
- 15.2: Line Integrals
- 15.3: Fundamental Theorem of Line Integrals
- 15.4: An Application of Line Integrals: Work
- 15.5: Green's Theorem
- 15.6: Parametric Surfaces
- 15.7: Surface Integrals
- 15.8: The Divergence Theorem
- 15.9: Stokes' Theorem

If time permits, additional materials from applications will be covered and will be supplemented to the textbook.

Technology Statement:  
A TI-83/84 calculator is permitted to use throughout the course. Please get an approval from the instructor to use other calculator types during midterm exams and the final exam. Use of calculators (such as TI-89) with symbolic computation capabilities will not be permitted on exams.

Learning Outcomes:  
Upon successfully completing this course, students will:
- be familiar with the change of variable principle for integrals on two or three dimensional regions;
- be familiar with integration of functions on parametric curves (line integrals), on parametric surfaces (surface integrals) and on parametric three-dimensional regions;
• understand the concept of the boundary of a parametric surface and the integral of a function on the boundary of a parametric surface;
• be familiar Green’s theorem for integrals of functions on plane regions or on plane parametric regions;
• be familiar with the Stokes theorem relationship between the integral of a function on a parametric surface and the integral of a related function on the boundary of the surface. Students will also be familiar with the analogue of Stokes’ theorem (the theorem of Gauss) for integrals of functions on three-dimensional parametric regions.

Homework: Homework is 15% of your final grade. Typically, there will be one homework assigned each week, except the testing weeks. Homework will be assigned on WebAssign and will normally be due in a week. It is your responsibility to check out homework due dates by visiting your WebAssign account for the course. Completion of homework assignments in a timely fashion shows that you are engaged in the learning; however, a mere completion of homework does not warrant your success. Your continuous thought process inside and outside classroom for an in-depth understanding of the course materials is critical for your success in the course.

Requirements of the Course/Method of Evaluation/Makeup Policy:
The student is expected to:
• attend all classes, participate in class discussions and complete homework assignments;
• take three midterm exams tentatively scheduled as follows;
  Exam 1 (Tuesday, February 5)
  Exam 2 (Tuesday, March 12)
  Exam 3 (Thursday, April 18)
• take cumulative Final Exam [Tuesday, April 30, 2019, 10:30 AM - 12:30 PM].
Make-up midterm exams will only be given for a university-approved excuse in writing or for an emergent health problem. In the latter case, a note from your doctor’s office must be presented as soon as your returning to KSU. Wherever possible, you should inform the instructor prior to missing an exam. Everyone must take Final Exam. All exams are closed book and closed notes. The Final Exam percentage score will be used to replace your one lowest midterm exam score if it helps your average. There will be no extra credit in this course, and therefore please do not ask for one.

Grading System:
Homework = 15%, Exam 1 = 20%, Exam 2 = 20%, Exam 3 = 20%, Final Exam = 25%

Grading Scheme:
A for [90%, 100%), B for [80%, 90%), C for [70%, 80%), D for [60%, 70%), F for [0, 60%)

Notice on Course Withdrawal: Students are responsible for maintaining and managing their enrollment status in their classes. A persistent nonattendance does not imply a withdrawal. Per university policy, I will assign a grade of WF to all students who cease to attend the class and do not participate in graded items during or prior to the last two weeks of the semester. The last date of attendance is required to be reported when assigning a grade of WF. Note that my compliance with this policy may affect your financial aid.

Student Disability Services: Students with disabilities needing academic adjustments are responsible to notify the instructor as early in the semester as possible. Verification from KSU Student Disability Services is required. All discussions will remain confidential.
Class Attendance: Regular attendance is expected and will be recorded. There will be a class roll going around in class every day, and it is your responsibility to sign in. Missing a class can leave you a lot behind in the course, and in this situation, you will be responsible for all announcements, assignments and materials presented in class.

Classroom Behavior: All phones, tablets, laptops must be put silent for the duration of each class. Music players cannot be used for the duration of class or testing. You are expected to arrive in class on time, be prepared for learning, and not be disruptive during the class. You may be asked to leave classroom for any misconduct or inappropriate behavior.

Academic Integrity: Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section II of the Student Code of Conduct addresses the university's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to university materials, misrepresentation/falsification of university records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an “informal” resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement. See also http://scai.kennesaw.edu/codes.php

Important Dates:

<table>
<thead>
<tr>
<th>Jan. 7</th>
<th>First Day of Spring Classes</th>
<th>Feb. 5</th>
<th>Exam 1</th>
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</thead>
<tbody>
<tr>
<td>Jan. 21</td>
<td>Martin Luther King Jr. Day</td>
<td>Mar. 12</td>
<td>Exam 2</td>
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<tr>
<td>Feb. 27</td>
<td>Withdrawal Deadline</td>
<td>Apr. 11</td>
<td>NCUR conference at KSU</td>
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<td>Apr. 1 - 5</td>
<td>Spring Break</td>
<td>Apr. 18</td>
<td>Exam 3</td>
</tr>
<tr>
<td>Apr. 29</td>
<td>Last Day of Spring Classes</td>
<td>Apr. 30</td>
<td>Final Exam (10:30 AM - 12:30 PM)</td>
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The instructor of the course reserves the right to make changes on pages 1-3 of this syllabus if it is necessary to account for ineluctable circumstances. In such events, the instructor will notify students of any changes at their students.kennesaw.edu address at least one week prior to the dates the changes take effect.