READ THIS SYLLABUS CAREFULLY. YOU ARE RESPONSIBLE FOR KNOWING THIS INFORMATION!

I. Basic course information

Title: Calculus III

Course Description: Continuation of MATH 221. Parametric equations, polar coordinates, two- and three-dimensional vectors, three-dimensional analytic geometry, functions of several variables, partial differentiation, double and triple integrals.

Prerequisite: MATH 221 (Calculus II), with a grade of C– or higher.

Instructor: Prof. Frederic Latour

Office Phone: 860-832-2855

E-mail: latourfre@ccsu.edu

Office: Marcus White 119

Office Hours: Tuesdays, 9:00am–1:00pm; Thursdays, 2:00–3:00pm and 4:30–5:30pm; Fridays, 9:00am–1:00pm; other times available by appointment.

Textbook: University Calculus (Early Transcendentals), 3rd edition, by Hass, Weir and Thomas (covers Calculus I, II and III) – OR – University Calculus (Early Transcendentals), Multivariable, 3rd edition, by Hass, Weir and Thomas (covers Calculus III only). We will be using the online system MyMathLab; you should make sure that your book comes with an access code for the system.

Class Meeting Times: Mondays, Wednesdays and Fridays, 1:40pm–2:50pm, in Henry Barnard, room 228.

Course Requirements: Attend and participate in class regularly; complete homework assignments; take quizzes and tests, as scheduled. A general rule for any college course is that you are expected to put in at least 2 hours of work outside of class for every hour in class.

Calculator Use: The recommended calculator for this course is the TI-83+. Similar calculators such as the TI-83, TI-84, TI-84+ and TI-86 are also acceptable and may be used for examinations. Calculators with a symbolic capability such as the TI-89 and TI-92 are not allowed on examinations. If you are wondering whether your calculator is acceptable, please ask the instructor.

Cell phones and other communication devices: Must be turned off at all times during class. No texting allowed in class.
II. Course Objectives
After taking this course, the student should be able to:
1) Compute derivatives and integrals of vector-valued functions and use them to solve problems from physics;
2) Sketch well-known surfaces in three-dimensional space;
3) Compute limits, partial derivatives, directional derivatives and gradients of multivariable functions;
4) Explain what it means for a multivariable function to be differentiable;
5) Use multivariable calculus to solve optimization problems;
6) Compute double and triple integrals in Cartesian, polar, cylindrical and spherical coordinates.
7) Evaluate and apply line and surface integrals;
8) Apply Green’s Theorem and Stokes’ Theorem.

III. Evaluation
Minimum averages have been established for each of these grades:

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<th>Minimum Average</th>
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<td>A</td>
<td>93%</td>
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<td>A−</td>
<td>90%</td>
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<tr>
<td>B</td>
<td>83%</td>
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<td>B−</td>
<td>80%</td>
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<td>C</td>
<td>73%</td>
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<tr>
<td>C−</td>
<td>70%</td>
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<td>D</td>
<td>63%</td>
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<tr>
<td>D−</td>
<td>60%</td>
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The average for the course will be based on the following weights:

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<tr>
<th>Component</th>
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<tr>
<td>Homework</td>
<td>12%</td>
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<tr>
<td>Quizzes</td>
<td>10%</td>
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<tr>
<td>Exam 1</td>
<td>17%</td>
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<td>Exam 2</td>
<td>17%</td>
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<td>Exam 3</td>
<td>17%</td>
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<tr>
<td>Final Examination</td>
<td>27%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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IV. Schedule of Important Dates
Exam 1: Friday, September 28, in class
Exam 2: Friday, October 26, in class
Exam 3: Monday, November 19, in class
Final Examination: Wednesday, December 12, 1pm–3pm

Please note: The final examination for this course is cumulative. It covers the entire course.

Quizzes will be on Fridays of weeks without an exam, beginning on September 7. There will be no quiz in the first week. Usually, the quiz will be based on the homework problems that are due on the day it is given (exceptions will be announced in class).

Homework will normally be due on Fridays. You are allowed to collaborate with other students on homework, but the solutions that you submit must be your own. Simply copying another student’s work (or allowing another student to copy your work) is considered cheating and is not acceptable. Late homework will be penalized (see VI. Course Policies).

Occasionally, there may be changes to the course schedule (for example, if classes are cancelled because of bad weather). Changes will be announced in class.
V. University Policies

Final Examination Policy

You must take the final examination on Wednesday, December 12, 1:00pm–3:00pm.

Course Accommodations Policy

Please contact me privately to discuss your specific needs if you believe you need course accommodations based on the impact of a disability, medical condition, or if you have emergency medical information to share. I will need a copy of the accommodation letter from Student Disability Services in order to arrange your class accommodations. Contact Stephanie Scapeccia in Student Disability Services at: (860) 832-1952, Carroll Hall, Room 150, if you are not already registered with them. Student Disability Services maintains the confidential documentation of your disability and assists you in coordinating reasonable accommodations with your professors.

Inclement Weather Policy

At the discretion of the President of the University, classes may be cancelled or delayed because of inclement weather conditions or special circumstances. The most accurate cancellation and delay information for Central Connecticut State University will be made available on the Storm Phone: (860) 832-3333 and on the Web at www.ccsu.edu.

Course Withdrawal Policy

The last day to withdraw from a course is Monday, November 19. Approvals for withdrawal are not required; however, it is strongly recommended that students consult with their instructor and academic advisor prior to deciding to withdraw. Cessation of attendance, notice to the instructor, or telephone calls to the Enrollment Center are not considered official notice of a student’s intention to drop the course.

Beginning on Tuesday, November 20, withdrawals are allowed only under extenuating circumstances and require approval of the course instructor and of the Chair of the Department of Mathematical Sciences.

Poor academic performance is not considered an extenuating circumstance.

Statement on Discrimination and Harassment

Central Connecticut State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon age; ancestry, color; gender identity and expression; intellectual disability; learning disability; mental disorder; physical disability; marital status, national origin; race; religious creed; sex; (including pregnancy, transgender status, sexual harassment and sexual assault); sexual orientation; or any other status protected by federal or state laws. Any student who has concerns about this should contact the Office of Diversity and Equity (ODE) at 860-832-1652, Student Affairs at 860-832-1601, or his/her faculty member. The ODE is located on the main floor of Davidson Hall, room 102.
V. University Policies, continued

Statement on Sexual Misconduct, Intimate Partner Violence, and Stalking

- Central Connecticut State University (CCSU) will not tolerate sexual misconduct against students, staff, faculty, or visitors in any form, including but not limited to: sexual assault, sexual exploitation, sexual harassment or stalking, as defined in CCSU policies. For additional information, please consult the CCSU policies at http://www.ccsu.edu/diversity/policies/index.html. All faculty members and staff have a duty to report incidents of sexual harassment, including sexual violence, to Rosa Rodriguez, Title IX Officer, Office of Diversity and Equity, Davidson Hall, room 102.
- To file a report, contact: Diversity and Equity (860-832-1652); Student Affairs (860-832-1601); Student Conduct (860-832-1667) or the University Police (860-832-2375).
- For support and advocacy, contact: Office of Victim Advocacy at 860-832-3795 or sarahdodd@ccsu.edu; Student Wellness Services at 860-832-1945 (confidential), the Women’s Center at 860-832-1655, the local YWCA’s Sexual Assault Crisis Services Hotline at 860-223-1787 (confidential) and Prudence Crandall Center for Domestic Violence (confidential) at 888-774-2900 (24-hour hotline).

Statement on Academic Integrity

All students are expected to demonstrate integrity in the completion of their coursework. Academic integrity means doing one's own work and giving proper credit to the work and ideas of others. It is the responsibility of each student to become familiar with what constitutes academic dishonesty and plagiarism and to avoid all forms of cheating and plagiarism. Students who engage in plagiarism and other forms of academic misconduct will face academic and possibly disciplinary consequences. Academic sanctions can range from a reduced grade for the assignment to a failing grade for the course. From a disciplinary standpoint, an Academic Misconduct Report may be filed and a Faculty Hearing Board may impose sanctions such as probation, suspension or expulsion.

For further information on academic misconduct and its consequences, please consult the Academic Misconduct Policy (http://www.ccsu.edu/AcademicIntegrity) and the Student Code of Conduct (http://web.ccsu.edu/StudentConduct). This policy is rigorously enforced by the Department of Mathematical Sciences.
VI. Course Policies

Resources Available

1. If you need help, take advantage of your instructor's office hours. Do not wait until just before the first test to do so.

2. The Learning Center is located in Room 016, Carroll Hall. Free tutoring is available. A schedule for hours the Center is open will be posted soon after the beginning of the semester.

3. Form a study group with other students in your section. Explaining solutions to homework problems to each other is a good way to learn.

4. A list of private tutors for hire is available in the math department office, Room 128, Marcus White, (860) 832-2835.

Late Homework Policy

- Written homework that is handed in late will be penalized as follows:
  - Written homework that is at least one day but fewer than seven days late: penalty is 15% of the points earned on the homework.
  - Written homework that is at least seven days but fewer than fourteen days late: penalty is 30% of the points earned on the homework.
  - Written homework that is at least fourteen days late but is handed in on or before the last day of the semester: penalty is 50% of the points earned on the homework.
  - Written homework that is handed in after the end of the semester’s final exams will not be graded.

- Online homework that not completed in time will be penalized as follows:
  - Online homework that is completed after 11:59pm on the due date will be penalized 20%; the penalty will only apply to answers that were submitted after the deadline.
  - Online homework that is completed after the end of the semester’s final exams will not count at all.

Absence Policy

It is your responsibility to learn the material that you missed if you are absent from class. There are no make-up quizzes; if you have a valid excuse for missing a quiz, you may be given an “excused absence”, at the instructor’s discretion. An “excused absence” means that your missed quiz will be excluded from your quiz average (and thus will not count against your grade).

**Missing an examination is a very serious matter.**

If you know in advance that you will have to miss an examination, you MUST inform your instructor at least two weeks before the examination. In that case, you will normally be offered an alternate time for the examination.

If you miss an examination because of an emergency, you need to contact your instructor as soon as possible, either in person or by e-mail, within 24 hours of the beginning of the examination. **DO NOT** wait until the next class to contact your instructor!
VI. Course Policies, continued

Academic Dishonesty Policy (cheating)

The standard penalty for academic dishonesty is a grade of 0% on the homework, quiz or examination. The following are examples of academic dishonesty:

- Copying another student’s homework solutions;
- Copying a tutor’s homework solutions;
- Using, in any way, an instructor’s solutions manual (an instructor’s solutions manual is for use by your instructor only, and not by students or tutors;
- Copying solutions from the internet;
- Bringing a formula sheet to an examination (whether or not you plan on using it);
- Writing formulas on your hand, calculator, etc.;
- Storing programs, notes or formulas or any other course-relevant information in your calculator’s memory.

If you are thinking of doing anything that you think is ethically ambiguous, you should ask your instructor if it is cheating. There is no penalty for asking!

The following are NOT cheating:

- Getting help from another student on homework, or working with another student on homework problems, provided that each student writes his/her solutions individually;
- Getting homework help from tutors (Learning Center or private tutors), provided that you write your solution by yourself;
- Getting homework help from your instructor or from another professor, provided that you write your solution by yourself.
- Getting homework help from your instructor or from another professor, provided that you write your solution by yourself.
VII. Course Material

I am planning on covering the material contained in the following sections of the textbook:

Chapter 11: Vectors and the Geometry of Space
   11.1 Three-Dimensional Coordinate Systems
   11.2 Vectors
   11.3 The Dot Product
   11.4 The Cross Product
   11.5 Lines and Planes in Space
   11.6 Cylinders and Quadric Surfaces

Chapter 12: Vector-Valued Functions and Motion in Space
   12.1 Curves in Space and Their Tangents
   12.2 Integrals of Vector Functions; Projectile Motion
   12.3 Arc Length in Space
   12.4 Curvature and Normal Vectors of a Curve
   12.5 Tangential and Normal Components of Acceleration
   12.6 Velocity and Acceleration in Polar Coordinates

Chapter 13: Partial Derivatives
   13.1 Functions of Several Variables
   13.2 Limits and Continuity in Higher Dimensions
   13.3 Partial Derivatives
   13.4 The Chain Rule
   13.5 Directional Derivatives and Gradient Vectors
   13.6 Tangent Planes and Differentials
   13.7 Extreme Values and Saddle Points
   *13.8 Lagrange Multipliers

Chapter 14: Multiple Integrals
   14.1 Double and Iterated Integrals over Rectangles
   14.2 Double Integrals over General Regions
   14.3 Area by Double Integration
   14.4 Double Integrals in Polar Form
   14.5 Triple Integrals in Rectangular Coordinates
   *14.6 Moments and Centers of Mass
   14.7 Triple Integrals in Cylindrical and Spherical Coordinates
   14.8 Substitutions in Multiple Integrals

Chapter 15: Integration in Vector Fields
   15.1 Line Integrals
   15.2 Vector Fields and Line Integrals: Work, Circulation, and Flux
   15.3 Path Independence, Conservative Fields, and Potential Functions
   15.4 Green’s Theorem in the Plane
   *15.5 Surfaces and Area
   *15.6 Surface Integrals
   *15.7 Stokes’ Theorem
   *15.8 The Divergence Theorem and a Unified Theory

The sections marked with an asterisk are optional and will be covered if time permits.
### VIII. Academic Calendar

#### AUGUST 2018

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