Dual Enrollment Calculus III – Fall 2020

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Rules and Procedures

1. Come to class prepared—have your notebook, pencils, calculators, and Chromebook for each class. If your Chromebook needs charging, make sure to bring your power supply as well.
2. Come to class on time.
3. Be respectful of yourself, your classmates, your teacher, and property. This includes following directions, not speaking while others are speaking, and handling complaints privately. Additionally, wear your mask at all times.
4. Participate actively during class, including taking part in class discussions, completing assignments, and getting help when needed. Do not wait until the last minute to get help.
5. Students are expected to complete online learning assignments on time and at the same level as they complete traditional in-person assignments. All work (both in-person and online) should be completed in accordance with the Mountain Brook Schools academic integrity policies.
6. At this time, eating is not allowed in the classroom. Drinks may be consumed at the discretion of the teacher, and masks must be worn at all times unless actively drinking. Dispose of trash appropriately.
7. The only personal digital devices allowed in the classroom are calculators and Chromebooks. Cell phones should not be out at all during class unless permission is granted, and they should also be placed on silent (non-vibrating) prior to entering class. If a cell phone is seen out in class without permission, punitive consequences will ensue.
8. When absent, the student is responsible for checking Schoology and completing any virtual assignments listed. If you will miss an assessment of any kind, email me as soon as you know of the absence, no later than the day of the absence, so that we can arrange for a make-up plan. Make-up plans will be individualized at the discretion of the teacher; however, they will follow standard guidelines (taking assessment early, using unit test to replace missing grade, or similar appropriate make-up arrangement).

Grading Policy

Grades will be determined on the total points method (total points earned divided by total points assigned). Grades for the course will come from the following:

- Unit tests (5 total, 100 points each)
- Final exam (200 points)

The grading scale is as follows:
A: 90-100
B: 80-89
C: 70-79
D: 65-69
F: 0-64

Homework

Homework will be given in-class but not counted for a grade—the point of homework is to give the student opportunity to practice mathematical skills.

Office Hours

Unless some urgent/pressing situation arises, I will be available in my room for help at the following times:

- before 7:15 am, T, W, Th
- 1st half of 7th period, T, Th
- by appointment

Contact

I may be contacted via my school e-mail address, kustosp@mtnbrook.k12.al.us.

For students:

- You may email me at this address from your school-issued Gmail account only—I will not respond to any student email from another source.
- I do not respond to emails sent to my school-issued Gmail account, so make sure to send email to the address above.
- Please include your first and last names in your email so that I will know with whom I am conversing.
- Students should check their Gmail twice daily (AM & PM) at a minimum.

For parents:

- Email is the best way to reach me. I will try to respond to emails within 24 hours.

Tentative Course Outline

I. Vectors & Space Geometry
   - 3D coordinate systems
   - Vectors
   - Equations of lines and planes
   - Functions of multiple variables
   - Cylindrical & spherical coordinates

II. Vector Functions
   - Functions as vectors
   - Derivatives and integrals
   - Arc length & curvature
   - Motion in space
   - Parametrization of surfaces

III. Partial Differentiation & Applications
   - Limits & continuity
   - Partial derivatives
   - Tangent planes & linear approximations
   - Chain rule
   - Directional derivatives & gradients
   - Extreme values
   - Lagrange multipliers

IV. Multiple Integration
   - Double & iterated integrals, including over general regions and in polar coordinates
   - Applications: mass, inertia, surface area
   - Triple integrals, including in cylindrical and spherical coordinates
   - Change of variables

V. Vector Calculus
   - Vector fields
   - Line integrals
   - Fundamental theorem for line integrals
   - Green's theorem
   - Curl & divergence
   - Surface integrals
   - Stokes' theorem
   - Divergence theorem