



Department of Mathematics

**Syllabus**  
for  
**Math 2415.221CL Spring 2022**  
**Calculus III**  
**MW 7:30 PM – 9:20 PM STEAM 115**

**Professor:** Tom English  
**E-mail:** [tenglish@com.edu](mailto:tenglish@com.edu)

**Communicating with your instructor:**

ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class through other electronic means

**Student hours**

**Office Hours:** MW 8:00 AM - 9:20 AM, TTh 10:00 AM – 10:50 AM, F 8:00 AM – 9:50 AM, 11:00 AM – 11:30 AM.

**1. Required Textbook**

The textbook used in this course is Thomas' Calculus, Early Transcendentals, by Hass, Heil and Weir, 14th edition, published by Pearson. Note: you will have access to this textbook via MyMathLab and do not have to purchase a printed copy of the textbook.

**2. Textbook Purchase**

A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

**3. Course Description**

Advanced topics in calculus, including vectors and vector-valued functions, partial differentiation, Lagrange multipliers, multiple integrals, and Jacobians; application of the line integral, including Green's Theorem, the Divergence Theorem, and Stokes' Theorem.

**4. Technology**

A calculator is needed for this course. A Texas Instruments TI 83 Plus or TI 84 Plus is recommended. A TI 89 or higher cannot be used in this course.

**5. Course Requirements**

## Homework Assignments

There is an assigned homework for each section to be determined in each class by consensus. You will present your homework to the class for a grade.

## 6. Determination of Course Grade

### Grading Formula:

The course grade will be determined by the following formula:

**Final Average = homework average.**

### Grading Scale:

Grade A: Final Average in [89.5, 100]  
Grade B: Final Average in [79.5, 89.5)  
Grade C: Final Average in [69.5, 79.5)  
Grade D: Final Average in [59.5, 69.5)  
Grade F: Final Average in [0, 59.5)

## 7. Make-up Policy

If you miss a class presentation you may come to office hours to present your work.

## 8. Course Outline

<b>Section</b>	<b>Topic</b>	<b>Due Date</b>
12.1	Three Dimensional Coordinate Systems	01-24-22
12.2	Vecctors	01-24-22
12.3	The Dot Product	01-26-22
12.4	The Cross Product	01-26-22
12.5	Lines and Planes in Space	01-31-22
12.6	Cylinders and Quadratic Surfaces	01-31-22
13.1	Curves in Space and their Tangents	02-02-22
13.2	Integrals of Vector Functions; Projectile Motion	02-02-22
13.3	Arc Length in Space	02-07-22
13.4	Curvature and Normal Vectors of a Curve	02-09-22
13.5	Tangential and Normal Components of Acceleration	02-14-22
13.6	Velocity and Acceleration in Polar Coordinates	02-16-22
14.1	Functions of Several Variables	02-21-22
14.2	Limits and Continuity in Higher Dimensions	02-21-22
14.3	Partial Derivatives	02-23-22
14.4	The Chain Rule	02-228-22
14.5	Directional Derivatives and Gradient Vectors	03-02-22
14.6	Tangent Planes and Differentials	03-04-22
14.7	Extreme Values and Saddle Points	03-07-22
14.8	Lagrange Multipliers	03-21-22
14.9	Taylor's Formula for Two Variables	03-23-22
15.1	Double and Iterated Integrals over Rectangles	03-28-22
15.2	Double Integrals over General Regions	03-28-22

15.3	Area by Double Integration	03-30-22
15.4	Double Integrals in Polar Form	04-04-22
15.5	Triple Integrals in Rectangular Coordinates	04-06-22
15.6	Applications	04-11-22
15.7	Triple Integrals in Spherical and Polar Coordinates	04-13-22
15.8	Substitutions in Multiple Integrals	04-18-22
16.1	Line Integrals of Scalar Functions	04-20-22
16.2	Vector Fields and Line Integrals: Work, Circulation, and Flux	04-25-22
16.3	Path Independence, Conservative Fields, and Potential Functions	04-27-22
16.4	Green's Theorem in the Plane	05-02-22
16.5	Surfaces and Area	05-04-22
16.6	Surface Integrals	05-09-22
16.7	Stokes' Theorem	05-11-22

\*\*\*\* W-day: April 25 \*\*\*\*

## 9. Attendance Policy

Attendance and classroom participation is required.

## 10. Withdrawal Policy

Students may withdraw from this course for any reason prior to the last eligible day for a “W” grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are only permitted to withdraw six times during their college career by State law. The last day to is April 25<sup>th</sup> for 16-week courses.

## 11. FN Grading

The FN grade is issued in cases of failure due to a lack of attendance, as determined by the instructor. The FN grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the FN grade is at the discretion of the instructor.

## 12. Early Alert Program

The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success is very important to us. I have been asked to refer students to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If you are referred to the Early Alert Program you will be contacted by someone in the Student Success Center who will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

## 13. Academic Dishonesty

College of the Mainland is committed to a high standard of academic integrity. All students are responsible for honesty and independent effort. Incidents of academic and scholastic dishonesty (including cheating, plagiarism, and collusion) will be dealt with in a manner that is consistent with College Policy and the Student Handbook. Any student found to have been academically dishonest

on an assignment, quiz or exam will receive a zero for that assignment, quiz or exam and he or she will be referred to the Office of Student Conduct for further disciplinary action. Please read the sections on *Standards of Student Conduct and Discipline and Penalties* in the on-line Student Handbook.

#### 14. **Concerns about the Instructor**

If you have any questions or concerns about any aspect of this course, please contact me at [tenglish@com.edu](mailto:tenglish@com.edu). If, after discussing your concern with me, you continue to have questions, please contact Department Chair Leslie Richardson at [lrichardson@com.edu](mailto:lrichardson@com.edu).

## 15. Table Mapping SLO's and Core Objectives

Student Learner Outcomes	Maps to Core Objective	Assessed via this assignment
1. Perform calculus operations on vector-valued functions, including derivatives, integrals, curvature, displacement, velocity, acceleration, and torsion.	Empirical and Quantitative Skills (EQS)	Exam
2. Perform calculus operations on functions of several variables, including partial derivatives, directional derivatives, and multiple integrals.	Critical Thinking Skills (CT)	Exam
3. Find extrema and tangent planes.	Critical Thinking Skills (CT)	Exam
4. Solve problems using the Fundamental Theorem of Line Integrals, Green's Theorem, the Divergence Theorem, and Stokes' Theorem.	Communication Skills (CT)	Exam
5. Apply the computational and conceptual principles of calculus to the solutions of real-world problems.	Critical Thinking Skills (CT)	Exam

## 16. Grade Appeal Process

Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook. <[https://build.com.edu/uploads/sitecontent/files/student-services/Student\\_Handbook\\_2019-2020v5.pdf](https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf)>. *An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.* [https://build.com.edu/uploads/sitecontent/files/student-services/Student\\_Handbook\\_2019-2020v5.pdf](https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf)

## 17. Academic Success & Support Services

College of the Mainland is committed to providing students the necessary support and tools for success in their college career. Support is offered through our Tutoring Services, Library,

Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

**18. ADA Statement**

Any student with a documented disability needing academic accommodations is requested to contact Holly Bankston at 409-933-8520 or [hbankston@com.edu](mailto:hbankston@com.edu). The Office of Services for Students with Disabilities is located in the Student Success Center.

**19. Counseling Statement:** Any student that is needing counseling services is requested to please contact Holly Bankston in the student success center at 409-933-8520 or [hbankston@com.edu](mailto:hbankston@com.edu). Counseling services are available on campus in the student center for free and students can also email [counseling@com.edu](mailto:counseling@com.edu) to setup their appointment. Appointments are strongly encouraged; however, some concerns may be addressed on a walk-in basis.

**20. COVID-19 Statement:** All students, faculty, and staff are expected to familiarize themselves with materials and information contained on the College of the Mainland's Coronavirus Information site at [www.com.edu/coronavirus](http://www.com.edu/coronavirus). In compliance with Governor Abbott's May 18 Executive Order, face coverings/masks will no longer be required on COM campus. Protocols and college signage are being updated. We will no longer enforce any COM protocol that requires face coverings. We continue to encourage all members of the COM community to distance when possible, use hygiene measures, and get vaccinated to protect against COVID-19. Please visit [com.edu/coronavirus](http://com.edu/coronavirus) for future updates.