MAT 250 – Calculus III

COURSE OUTLINE

Class Section(s) Time & Location: On Line

Instructor:	Kathleen Kane	Semester:	Fall 2020
Office Hours:	MWF 11:30am -12:30 pm TR 8:00am – 9:00 am	Office Location:	Zoom – Link posted on Blackboard
Instructor Contact Methods:	Email: kkane@ccac.edu - Preferred Phone: (412) 237-4511 – Messages are forwarded via email.		

Books & Materials	Calculus, 8th Edition Early Transcendentals by James Stewart with WebAssign Access Starting August 17th, you will have a two-week free trial period for WebAssign, that includes eBook access. After that point, you will need to secure your materials for the course. Depending on what you purchased for Calculus I/II, you may not need to purchase anything for Calculus III. If you are not sure, please ask before you buy anything. The eBook and WebAssign are included in a Cengage Unlimited subscription.

Course Credits:	4 credits
Prerequisites/ Co-requisites:	Prerequisite: MAT 202 or equivalent Co-requisites: None
Course Description:	A continuation of MAT 202. Topics include quadric surfaces, calculus of vector-valued functions, calculus of multivariate functions, three-dimensional analytic geometry and vector analysis.
Learning Outcomes:	Upon successful completion of the course, the student will be able to: 1. Use vector-valued functions to describe curves in two and three-dimensional space and to find tangents, arc length and curvature. 2. Prepare graphs in three-dimensional Cartesian, cylindrical and spherical coordinate systems. 3. Find equations of lines and planes tin three-dimensional space, including tangent planes and normal lines to surfaces. 4. Compute partial derivatives, total differentials, directional derivatives and gradients. 5. Evaluate double and triple integrals to determine areas of regions and volumes of solids in various coordinate systems. 6. Maximize function on compact domains via derivative tests and

	Lagrange multipliers. 7. Define and evaluate line and surface integrals. 8. Translate between double/triple integrals and line/surface integrals via Green's Theorem, Stokes' Theorem and the Divergence Theorem. 9. Solve selected application problems.

General Education Goal(s)	How this course meets the General Education goal(s)?
Quantitative Reasoning and Problem solving	Students will learn how to extend the concepts of derivatives and integrals learned in Calculus I and II to multi-dimensional space and to apply these concepts to perform computations and solve problems.
Critical Thinking and Problem Solving	Students will learn how to extend the concepts of derivatives and integrals learned in Calculus I and II to multi-dimensional space and to apply these concepts to perform computations and solve problems.

Course Policies & Procedures

Evaluation Plan:	The grade will be determined based on the following: 1. WebAssign Assignments (10%) 2. Tests (70%) 3. Comprehensive Final Exam (20%) Grade = 0.10(Assignment Average) + 0.70(Test Average) + 0.20(Final Exam Average) The grade will be assigned according to the following scale: 90 - 100 A, 80 – 89 B, 70 – 79 C, 60 – 69 D, 0 - 59 F **THERE IS NO EXTRA CREDIT!** **THE GRADES WILL NOT BE CURVED!** **YOU GET WHAT YOU EARN!** At any point, students can view their current grade (except for WebAssign) on the Blackboard Website under the "My Grades" tab. It is your responsibility to make sure your grades are entered correctly. If there is an issue, please contact the instructor as soon as possible to have it corrected.
Attendance:	This is an online course with a specific schedule, not a self-paced course. While there are no class meetings, I suggest that you establish a study schedule that allows you to work on the course at specific times during the week. Stick to the schedule, as if you were

	going to an actual class – no exceptions. Internet courses require much more independent study than a traditional classroom lecture-based course. Internet courses provide greater scheduling flexibility and freedom, but require MORE DISCIPLINE and TIME MANAGEMENT SKILLS than traditional courses. Please understand that there are set deadlines and it is your responsibility to plan accordingly. Internet courses are MORE TIME CONSUMING than traditional courses. Internet courses require students to access course assignments and materials through websites. I will be making use of two websites for this course. The first is Blackboard where many of the course materials are located. On the Blackboard website, I will post video lectures. You should watch the lectures just as if you were sitting in a traditional classroom. Take notes and work out examples as you watch the videos. Pause and rewind the videos as necessary. After each video, you will be directed to a second website, WebAssign. WebAssign will give you access to the textbook and provide a platform for completing the homework for the course. To be successful in any college level course, the general rule of thumb is to study two to three hours for every one of lecture. As a student, you may spend more or less time studying depending on your level of comfort with the material. You are encouraged to do additional homework problems if you feel the need. If you are having difficulties with the material, it is strongly encouraged that you contact the instructor as soon as possible and/or use the tutoring services available at the college. Attendance will be based on the work that is assigned and completed. In accordance with college policy, attendance must be reported at the 20% point of the semester. To be reported as having attended class, you must submit at least one assignment during the first two weeks of the class. If you stop participating in the class without officially withdrawing from the class, you will receive an F grade and I must report the date of last attendance. I will be using the date of the last submitted assignment as the last date of attendance
Test and/or Quiz Makeup:	Each exam is “closed book/closed notes” and will take place during the scheduled Zoom for one hour and twenty minutes (except for the final exam, which will be three hours). This is how it will work: 1. The week of each exam, I will set up four Zoom sessions, and

	you will have an opportunity to schedule your exam during one of those four periods. My initial plan is to offer an exam session on Sunday Evening and three on Tuesday (morning, afternoon, and evening). This may change based on demand. 2. Announcements on Blackboard will remind you to email me with the testing session you will attend. 3. Before the scheduled exam session, set up your workspace with your computer or device you use to access Zoom, blank paper, and writing instruments. Your textbook, notebook, etc. cannot not be in your workspace. Calculators that symbolically perform derivatives and integrals are not permitted. 4. You must watch the Zoom chat during the exam. If there is an issue with your testing space, I will address it with you privately via the chat. If you fail to address the issue, you will receive a zero for the exam. 5. Log in to the Zoom meeting with your camera on and with you and your work environment visible in the camera frame. Please have a valid ID (school ID or drivers license) available. If I do not recognize you, I will ask you to verify your identity by showing the ID to the camera. Ideally you will do this before the session is scheduled to begin to get acclimated and in case of glitches. I will check your surroundings for contraband. 6. At the beginning of the class period, I will present you with the exam problems on Zoom, and you will work the problems on your own paper, writing legibly, showing your work, and circling your final answers for each problem. You may not consult your textbook, notes, online resources, apps, other people in your space, or your pets while taking an exam. You and your workspace must remain on camera for the duration of the exam. 7. When I "call time" to end the exam, you must stop working and start documenting your work so that you can submit it to me. 8. Remain in the Zoom meeting with your camera on as you scan or photograph your work and combine them into a single PDF file. This can be accomplished using a physical scanner if you have one, or with an Android/iPhone app such as CamScanner, MiniScanner, or ScanPro. Don't change any of your work after scanning! 9. Finally, log on to Blackboard, access the upload tool for the exam, and follow the instructions to submit your exam work to me. I must get your submission within 15 minutes of the

	end of the exam or 15 minutes after you leave the Zoom meeting, whichever is earlier. I will quickly review your submission for readability and will email you if I needed your work re-scanned.
Technology Use:	You will need reliable internet service, and for testing and office hours, a PC or a mobile device with a working camera and microphone, and "Zoom Client for Meetings" software. This software is available for various devices at https://ccac.zoom.us/download. Once installed, visiting the appropriate Zoom link will give you access to an exam session or office hours at their scheduled times.
Academic Honesty:	Cheating of any type will not be tolerated. Anyone caught cheating will be subject to the policies and procedures described in the student handbook. Academic dishonesty (cheating) includes, but is not limited to: • Having unauthorized material in your testing area. The only items in front of you should be a calculator that does not symbolically do calculations such as derivatives and integrals, blank sheets of scratch paper, and a writing utensil. • Not showing the front and back of your scratch paper to the webcam if asked. Scratch paper consists of single sheets of paper and may not be in a notebook. • Not performing an adequate environmental scan. Your scan should show your entire surroundings, including your workspace and the area around it. • Tampering with video or sound recording during your exam. • Having someone else present in the room used while testing. • Leaving your seat during the test. • Collaborating with anyone regarding the exam. • Anything considered cheating in an in-person test. • Altering your scratch paper after the exam ends. The only changes you are allowed to make is putting your name on the scratch and numbering the problems in the appropriate areas. • Extended period of time between end of the exam and work being uploaded into Blackboard. By the taking the exam, you agree to these guidelines. Failure to abide by them will result in a grade of zero. Additionally, the majority of the problems in Calculus III will require a significant amount of supporting work. Correct answers that seem to "magically appear" with out the appropriate supporting work are

	huge “red flags” that the answers have been obtained by “unauthorized means”. These “magic” correct answers with out appropriate supporting work will receive a grade of 0. The only chance you will have to erase the zero and earn a grade for the problem will be the following: 1. Contact me within two days of the test being returned to you and designate which “correct answer without supporting work” grades you are challenging. 2. We will arrange a Zoom meeting. 3. In the Zoom meeting, I will assign you as a “co-host” of the meeting. This will give you access to the whiteboard feature in Zoom. 4. I will give you a problem similar to the one you are challenging. You will work it out, explaining the steps as you go. 5. I will record your work and assign a grade based on its merit. 6. Steps 1 – 5 above must be completed with in one week of the test being returned to you. Please understand that if you want me to believe that you did “all the work in your head”, then this is the only way I can grade what is “in your head”. This opportunity only applies to correct answers without supporting work. It does not apply to answers that are wrong
Other Policies and Procedures:	There are no make up exams for any reason. If you miss an exam, you will receive a “0” for the exam. The percentage on your final exam will be used to determine a grade for the missed exam. This will be done for one missed exam only. Subsequent missed tests will receive a grade of 0. You must take the final exam. Failure to take the final will result in an automatic F for the class.
Resources:	• Instructor office hours via Zoom • Math Café available via Zoom • EBook • Help offered in WebAssign
	All students are expected to read and comply with the policies and regulations set forth in the CCAC Student Handbook, including without limitation the College’s policies regarding academic and behavioral conduct, the procedures for requesting an accommodation based upon a disability, pregnancy or pregnancy related condition, or a religious observance, and for reporting unlawful discrimination and harassment.

	The Student Handbook is available to view and download from the College's website at the following URL: https://www.ccac.edu/policies. The full text of the College's *Policy Manual, Administrative Regulations Manual*, and the Civil Rights Complaint Procedure can also be viewed and downloaded at: https://www.ccac.edu/policies. Information concerning the process and documentation required to request a disability-related accommodation can be obtained by contacting the campus' Office of Supportive Services for Students with Disabilities (OSSSD) or by visiting the OSSSD information page at https://www.ccac.edu/policies. Students are reminded that they can access their course information and CCAC email account, the CCAC Academic Calendar (including add/drop/withdrawal deadlines), the Student Handbook, the College's Incident Report form, and many other College services through the MyCCAC portal at: https://my.ccac.edu.

Course Plan:

Class Week/Date	Topics / Learning Activities	Assignments / Homework	Tests, Quizzes, Evaluations
Week 1 8/31 – 9/6	Introductory Activities Section 12.6 Section 13.1 Section 13.2	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.
Week 2 9/7 – 9/13	Section 13.3 Section 13.4 **Schedule Test 1 on Sections 12.6 and 13.1 – 13.4 for Zoom Session on Sunday Evening 9/13 or one of the Zoom slots on Tuesday 9/15**	Watch Videos posted on Blackboard and do homework via WebAssign WebAssign	See Announcements in Blackboard.

Week 3 9/14 – 9/20	Section 14.1 Section 14.2 Section 14.3	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.
Week 4 9/21 – 9/27	Section 14.4 Section 14.5 Section 14.6	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.
Week 5 9/28 – 10/4	Section 14.7 Section 14.8 **Schedule Test 2 on Sections 14.1 - 14.8 for Zoom Session on Sunday Evening 10/4 or one of the Zoom slots on Tuesday 10/6**	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.
Week 6 10/5 – 10/11	Section 15.1 Section 15.2	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.
Week 7 10/12 – 10/18	Section 15.3 Section 15.4 Section 15.5	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.
Week 8 10/19 – 10/25	Section 15.6 Section 15.7	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.
Week 9 10/26 – 11/1	Section 15.8 Section 15.9 **Schedule Test 3 on Sections 15.1 - 15.9 for Zoom Session on Sunday Evening 11/1 or one of the Zoom slots on Tuesday 11/3**	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.
Week 10 11/2 – 11/8	Section 16.1 Section 16.2 Section 16.3	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.

Week 11 11/9 – 11/15	Section 16.4 Section 16.5 **Schedule Test 4 on Sections 16.1 – 16.5 for Zoom Session on Sunday Evening 11/15 or one of the Zoom slots on Tuesday 11/17**	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.
Week 12 11/16 – 11/22	Section 16.6 Section 16.7 Section 16.8	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.
Week 13 11/23 – 11/29	**Thanksgiving Break!**	Review and start to prepare for the final exam	
Week 14 11/30 – 12/6	Section 16.9 Section 16.10	Watch Videos posted on Blackboard and do homework via WebAssign	See Announcements in Blackboard.
Final Exams 12/7 – 12/13	**Schedule Comprehensive Final Exam 5 for Zoom Session on Sunday Evening 12/6 or one of the Zoom slots on Thursday 12/8**	Study for final	Study for final Take final Enjoy your break!

Course Outline Corrections:
During the semester/session, reasonable changes to the course outline may be academically appropriate. Students will be notified of these adjustments by the instructor in a timely manner.