MATH 2415 – Calculus III Hybrid/Flex

Section 001, **M** W 8:30 – 10:35 am

Math Bldg., Rm. 105

Office Hours:

I. Instructor Info

A. Instructor: Miss S. Davis

1.) Office: 103 MATH Bldg.

- 2.) Phone: (806) 894 9611 ext. 2699
- 3.) E-mail address: sdavis@SouthPlainsCollege.edu

a.) Any questions or comments should be sent using **Blackboard email** (in Cal 3 Blackboard, under COMMUNICATIONS category, the tab, *Bb E-mail Message*) not your SPC email. SPC email will be used as a secondary communication tool. Since Blackboard is limited in its ability to handle math symbols easily, I will reply to your math questions in pdf, or by video through **Blackboard Collaborate** or Zoom, or another form using an attachment in *SPC email*.

b.) Response Times

Tuesday Wednesday Thursday Monday Friday 8 - 8:30a 10:30 – 11a 10 – 11:30a 10:30 – 11a (F2F/V) (\mathcal{V}) (F2F/V)F2F by request or by appointment F2F = face-to-face $\mathcal{V} = virtual$ You do not need an appointment for the physical (f2f) office hours. When you come by, I may be assisting another student, but please wait patiently, and I will attend to you eventually. For the virtual office hours, appointments are required to eliminate confusion of students from mixed classes. Please use Calendly located in Calculus III Blackboard as a tab, Schedule Virtual Appointment, under the category, INSTRUCTOR INFO.

I will do my best to respond to your email within

the primary office hours availability zone posted on Blackboard. If the emails are overwhelming in volume then please allow me 72 hours = 3 business days of receipt Monday through Thursday throughout the regular business day Monday through Thursday to respond to your email. If I do not respond within 72 hours please email again. <u>Response times are</u> dependent on whether my proposed method of emailing is respectively followed. In other words, if you decline to follow my instructions for emailing me through Blackboard and email me through my SPC email account then response times could take weeks.

4.) Messaging/Announcements: Blackboard email and postings will be used as our primary virtual means of communication. SPC Email will be used as a secondary communication instrument since student emails can be overwhelmed by administrative emails. Your course will be contained within Blackboard. The instructor will post general announcements in Blackboard usually accompanied with email to your SPC email address. Blackboard messaging and postings on the course homepage in Blackboard are a primary method of communicating in this class online.

You must check Blackboard homepage on a regular basis preferably daily.

II. Course Info

A. Course Description: Parametric equations and polar coordinates, functions, derivatives, & integrals; vector analysis; quadrics & surfaces functions and graphs; multivariable functions, partial derivatives, & their applications; multiple integration in rectangular, polar, cylindrical, & spherical coordinates with application; Jacobian; and vector fields analysis including Green's & Stoke's Theorem.

B. Text: <u>Calculus</u>, 10th edition by Larson & Edwards (ISBN: 978-1-285-05709-5)

C. Supplies: Scientific calculator (preferably a TI-85 or higher), (at least a 2.5 in ring) notebook, hole puncher, stapler, a staple puller & a red pen/pencil.

D. Purpose: To provide a transferable course in Calculus III, to lay a foundation for the study of Differential Equations, and other more advanced mathematic &/or engineering courses.

E. Prerequisites: MATH 2414 (Calculus II) and, strategically, Analytical Geometry

III. Attendance Policy

A. Attendance: Lectures, effort, and Q&A are the most important activities for success in this course. Records of your attendance are maintained throughout the semester through in-class Q&A and your video lecture attendance. Attendance will be monitored through in-class Q&A and online video lectures. Maintaining a time management schedule for the online video lectures is crucial to avoid lagging in this class. Excessive absences whether in-class Q&A and/or video lectures are equivalent to miss twenty percent (20%) of class assignments for the semester, for any reason. Should this number be exceeded, the instructor has the right to drop the student with a grade of F or an X, depending on the instructor's discretion.

B. Withdrawal: If you wish to withdraw yourself from this class for any reason, you must initiate the appropriate steps on your own. There is a *How to Drop* tab on the **Cal 3 Blackboard** course located under the ADMINISTRATIVE category but I have set it with a couple of precautionary steps for your benefit.

IV. Equipment

A. Online Essentials:

1.) Internet access

- ➢ Working, reliable internet access with the ability to view videos via Blackboard or YouTube and participating in online conferences via Zoom.
- Libraries, school and public communities, are a great source to computer accessibility. Reassure operating hours since posted available times may not concur with actual available times. Remember during this COVID era, things may not appear as they seem.
- 2.) Computer (laptop highly recommended)
 - Method to scan homework/tests. You may be expected to scan your homework/quizzes/tests and submit them to the instructor.
 - Method(s) of scanning handwritten work to submit. The free app CamScan is available. It is very user friendly and the scans are usually clear. You can scan a group of pages called a "batch". If you have another suggestion then please feel free to contact me. The Technology tab in Blackboard in the SKILLS & HOW TO category lists a couple of methods for effective means of scanning and virtually submitting your documents. Practice makes perfect in terms of time duration and thoroughness for these methods.

3.) Webcam

An online video conference program will be used as a tool to attend live lectures online through Blackboard and to monitor work activity if it happens that we have to work from home via online. Thus, online video conferencing requires students to have a webcam.

4.) Blackboard (Bb)

- \blacktriangleright The online course management system that will be used for this course.
- A wealth of information is provided to you for this class in the Cal 3 Blackboard. All the information for this class will exist on Blackboard including but not limited to syllabus (updated), homework assignments, worksheets, videos, (located on Cal 3 Blackboard under the COURSE MATERIAL category), & etc., but additional material involves COVID material (refer to X. A. of this syllabus), Classroom Conduct (Cal 3 Blackboard tab, *Notebook Material*, under SUPPLEMENTARY category), Technological & Equipment info & assistance (refer to IV. A. 2.) of this syllabus), Tutoring opportunities (refer to V. F. 4.) of this syllabus), previous semester student evaluations (located on Cal 3 Blackboard under the EVALUATION category in tab, *Rate My Professor*), and miscellaneous administrative information.

Blackboard under the EVALUATION category in tab, *Rate My Professor*), and miscellaneous administrative information. Please be responsible to log in to Blackboard and visit Calculus III Blackboard page and peruse through it to become familiar with all the items.

Login at <u>http://southplainscollege.blackboard.com</u>. The user name and password should be the same as the MySPC and SPC email.

User name: first initial, last name, and last 4 digits of the Student ID

Password: Original Campus Connect Pin No. (located on SPC acceptance letter)

- > *Technical Support:* Student support is available by emailing <u>blackboard@southplainscollege.edu</u> or calling 716-2180. There is also an easy access tab, *IT Help Desk*, in the Cal 3 Blackboard located under the ASSISTANCE category. When emailing a request for help, include your full name, course(s) enrolled in, name of instructor(s) and a phone number where you can be reached.
- Blackboard Tutorials. Blackboard video tutorials are available at <u>http://ondemand.blackboard.com/students.htm</u>. An easy access tab, *Blackboard Collaborate Ultra Assistance*, in the Cal 3 Blackboard course under the COMMUNICATIONS category.
- Blackboard App. A free Blackboard App is highly suggested and recommended and can be downloaded in the APP store specific to your cell phone.
- 5.) Calculator
 - ≻ You will need a scientific calculator for this course.
 - ▶ Recommended: TI-89 Titanium (for STEM majors) or TI-92.
 - Acceptable: TI-83, TI-83+, TI-84, TI-84+, or TI-84+ Silver Edition but many others are also acceptable.
 - Any other graphing calculator, you will need to read you manual to determine how to make the processes work.
 - > The TI graphing calculator model is not allowed in this class: TI-Nspire.
 - > Cell phones and similar devices may NOT be used as calculators and no sharing of calculators is allowed.
 - > If you have any questions about your calculator, check with the instructor immediately.
- 6.) Other Resources
 - ➤ You are expected to keep up with the schedule set forth by the due dates of the video lectures, homework assignments, quizzes, and the exams. If you need help, please ASK! Here are some other good resources online:
 - Your instructor is your first and BEST resource for any help!!!!
 - Free online math videos at <u>www.khanacademy.org</u>, <u>www.patrickjmt.com</u>, <u>www.mathtv.com</u>, & MIT Opencourseware .
- 7.) Troubleshooting
 - Computer Issues
 - If your personal computer becomes "disabled", then you will need to seek an alternate computer source. Please refer to section IV, 1.) of this syllabus for recommendations.

V. Coursework Policies

A. Assignment Policy: Homework will be assigned for each class meeting (located on Cal 3 Blackboard under the COURSE MATERIAL category in the tab, *Homework Textbook Assignments*). You are expected to work all problems assigned in each assignment and to seek help when you do not understand. You are responsible for keeping up to date and prepared. Homework is to be completed and be kept in a notebook that must accompany you to each (f2f) class session. Late homework is not accepted. Refer to Cal 3 Blackboard under SUPPLEMENTARY category in the tab, *Notebook Material*, for the homework procedure and others to be used in this class.

B. Assessments: There will be quizzes given over the assigned homework and online lecture videos in which no make-ups will be allowed. The total number of quizzes for the semester is unpredictable (unknown number at this moment) but only a portion will count as the quiz grade (implying the few lowest will be dropped). The quizzes will be distributed partially online and paper inclass. The paper quizzes would be handwritten requiring you to work the problems out on paper, scan your work, and upload it to Cal 3 Blackboard immediately after you complete the quiz. Please refer to section IV, 2.) of this syllabus for scanning & uploading documents. For online quizzes, you will be able to access assignments or the book in Cal 3 Blackboard during the quiz. You are not allowed to use any electronic devices during quizzes except a calculator! You will have a limited time to complete each quiz.

C. Tests: There will be four (possibly five) tests and a comprehensive final. Initially, the exams will be f2f. However, if COVID prevents f2f meetings then the exams will be conducted online through Zoom meetings. Zoom invitations will be delivered through Blackboard via announcements and/or Bb email on or before exam days.

If the final exam score is greater than any non-zero major exam score then the final exam score replaces the major exam score. In other words, the major exam score will be deleted, and the final exam score will count two times (an exception is the Honest Effort Rule (**H.E.R.**) policy). See your OUTLINE for the approximate date for each test.

1.) Make-up Policy: There is no automatic provision for making up exams. Only under extreme circumstances (e.g., death in the family, hospitalization, +COVID test) will make-up exams be inevitable, and <u>these circumstances must be documented</u>. These situations will be dealt with on a trial-by-trial basis. If at all possible, the instructor should be notified prior to missing an exam.

D. <u>Grading Policy</u>: Your final grade will be based solely on major exam scores, homework/quiz average, and a comprehensive final.

1.) Grading Score: Final score = $\frac{\text{Test } 1 + \text{Test } 2 + \text{Test } 3 + \text{Homework/Quiz Avg. + Final Exam score}}{5}$

2.) **NOTE:** If the final exam score is greater than the least non-zero major exam score (excluding the Homework/Quiz avg.) then the final exam score replaces the least non-zero major exam score. In other words, the major exam score will be deleted and the final exam score will count two times.

3.) Borderline Grades: These grades will be evaluated with regard to attendance and mature conduct in class

4.) **Blackboard Gradebook:** Your grades will be accessible in Cal 3 Bb Gradebook under category, EVALUATION, in the tab, *Grades*. However, I consider Bb Gradebook the UNOFFICIAL grade because, at any time, it may not contain all your grades for the course. For your final score in this course, you will obtain at the end of the semester **through Texan Connect** &/or Colleague.

E. STUDY: You should normally spend approximately 2-3 hours outside of class in study for each hour of lecture. Some material will require more time than other material. Also, your mathematical background is a major factor in the time spent completing the homework. Try to study the assigned lesson as soon after the class meets if possible. With your greatest effort, try not to get behind on the homework! Refer to the "How to Study" sheet for further detailed studying suggestions.

1.) Methods of Learning Assessment:

a.) Handwritten notes for video lectures. This helps both of us to be diligent in keeping your skills on pace.
2.) Notebook: Homework, quizzes, tests, and other useful material should be kept in a notebook in which the notebook will be used as a reference and study guide. The following material will be placed in the notebook in the order listed:

- a.) Cover sheet including Name.
- b.) <mark>Syllabus</mark>

e.) Work

) _____

f.) Quizzes

c.) Assignment sheet

d.) Notes

Class, and Semester

g.) Tests

h.) Miscellaneous

(1.) *To print all the material for your notebook, please visit the SUPPLEMENTARY category then the *Notebook Material* tab in the **Cal 3 Blackboard** page. All printed material needs to be read at least once during the term of this course.*

3.) **Tutoring:** Free tutoring is available in the Math-Engineering building (room M116) and online. For the Math-Engineering building tutor, please remember to sign in when you seek help from a tutor. For free online tutoring, please refer to Cal 3 Bb tab, *Online Tutoring*, as well as the tab, *Peer Tutors*, under the RESOURCES category.

4.) **Video Tapes:** Videos for many review topics in this course are available through the Mathematics Department on Blackboard. For username and password, please use *mvideos*.

Таре	Торіс			
	Analytical Geometry			
310	Parabolas			
320	Ellipses			
325	Hyperbolas			
	Parametric Equations			
335	Polar coordinates			
	Calculus III			
485	Double Integration			
490	Double Integration with Polar Equations			

F. Critical Dates:

Jan 18	MLK, Jr.	Annil 12	WEB Pre-registration for Summer, Spring Interim, & Fall		
March 15 – 19	SPRING Break	лрги 12	2021		
April 2	Easter	Final Exams			
April 29	Last Day to Drop	May 10	(8 – 10a, Monday)		

VI. Responsibilities & Consequences

A. Student Responsibilities:

- 1.) Attend class, be aware of announcements made in class and on Blackboard, and ask questions when necessary.
- 2.) Work homework problems the day that they are assigned.
- 3.) Form (virtual) study groups.
- 4.) Get help from tutors, tapes, and/or the instructor.

5.) Students will be required to wear a face mask while in SPC campus buildings or in outside areas if social/physical distancing cannot be maintained (refer to X. A. of this syllabus).

6.) All students are encouraged to implement good hygiene measures such as washing hands regularly, using hand sanitizer, and covering coughs/sneezes. Hand sanitizing stations are available across all SPC locations.

7.) **Cell phones, laptops, and pagers during class! **

a.) Cell phones and laptops are required to use in class in order to upload class work documents.

(1.) If the instructor determines that activation of a cell phone, pager, PDA, or laptop irrespectively interrupts the lecture or classroom discussion or impedes the progress of any student then the instructor will ask the student to leave either temporarily or permanently.

(2.) No technologic devices such as cell phones, PDA's, etc. are to be used during tests or in-class quizzes but, at the instructor's discretion, may be used at the completion of tests and/or in-class quizzes. If due to technological disruption, the instructor may grant permission for a student(s) to use such devices for a test or in-class quiz.

8.) Follow the classroom policy, no food or drink allowed in the classroom if posted (located in Cal 3 Blackboard, under SUPPLEMENTARY category and tab, *Notebook Material*).

9.) In addition to the No Food or Drink classroom policy and in accordance to campus policy, no tobacco products are to be permitted and consumed in class.

10.) You will obtain your final grade for the class through Texan Connect &/or Colleague.

B. Cell Phone Policy: All students will, during each class period and for its duration, place and keep their cell phone in its deactivated state, provided that they are at the present time in possession of said device, face-down in the right-hand corner and on the top surface of their desk <u>unless the cell phone is used as a laptop function</u>. If a student's cell phone activates and/or the student engages in text messaging during class at anytime during the semester, the student, by the instructor's discretion, could be permanently dismissed from the class for the remainder of the semester. If a student's cell is activated during class and/or the student engages in text messaging determined by the instructor, and the student chose not to place their phone on top of their desk as mentioned above then the student <u>will</u> be dismissed from the class by the instructor permanently.

C. Academic Integrity: The attempt of any student to present as his or her own any work which he or she has not honestly performed is regarded by the faculty and administration as a serious offense and renders the offender liable to serious consequences, possibly suspension. For more detail, see "Academic Integrity" and "Student Conduct" in the South Plains College General Catalog.

1.) You are expected to work alone on all quizzes and tests. You are not allowed to use any electronic device other than your calculator during a quiz or test. If you choose to cheat, you will be withdrawn immediately from this class with a grade of "F."

D. Academic Misconduct: Complete honesty is required from students in all facets of course work including homework assignments, tests, and the final exam. See the South Plains College Catalog for more detail.

E. Sanctions for Cheating or Plagiarizing: A grade of "F" in the course will be assigned to any student caught cheating or plagiarizing; additional sanctions may also be considered. Students are responsible for understanding the meanings of the words cheating and plagiarizing. (Refer to page 10 of the syllabus for specific details of the definitions of cheating and plagiarizing.)

VII. Questions:

A. I invite all your questions **except** the following:

1.) I wasn't able to make it to class. Did I miss anything? (Yes.)

2.) Is this going to be on the test? (Perhaps, not directly, but if the ideas were not important, I would not be discussing them in class.)

3.) Do you have the tests graded? (I put forth my best effort to have the tests graded so as to return them the next class session. However, there are times due to uncontrollable factors that this may not be possible.)

VIII. Objectives: Upon completion of this course and obtaining a passing grade, the student will have mastered at least 70% of the course objectives. The course objectives provide that the student be able to:

- 1.) Calculate derivatives of parametric and polar functions;
- 2.) Calculate anti-derivatives of parametric and polar functions;
- 3.) Calculate dot and cross product;
- 4.) Write equations of lines and planes in space using vector analysis;
- 5.) Find maximum, minimum, and level curves of 3 D graphs;
- 6.) Work with multivariable functions and calculate partial derivatives;
- 7.) Perform double and triple integration;
- 8.) Green's Theorem; &
- 9.) Find area, volume, arc length, and surface area by use of double and triple integration.

IX. SPC Policies & Procedures

A. **COVID Statement:** It is the policy of South Plains College for the Spring 2021 semester that as a condition of on-campus enrollment, all students are required to engage in safe behaviors to avoid the spread of COVID-19 in the SPC community. Such behaviors specifically include the requirement that all students properly wear CDC-compliant face coverings while in SPC buildings including in classrooms, labs, hallways, and restrooms. Failure to comply with this policy may result in dismissal from the current class session. If the student refuses to leave the classroom or lab after being dismissed, the student may be referred to the Dean of Students on the Levelland campus or the Dean/Director of external centers for Student Code of Conduct Violation (This information and more regarding COVID is located on the **Cal 3 Blackboard** course in the tab, *COVID Information*). Students who believe they have been exposed or may be COVID-19 positive, must contact Health Services, DeEtte Edens, BSN, RN at (806) 716-2376 or dedens@southplainscollege.edu (This Health Services info can also be accessed on the **Cal 3 Blackboard** course located under the SERVICES category in *Student Health Services* tab).

B. Diversity: In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world, and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

C. Disability Statement: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Special Services Office, preferably, early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Special Services Coordinator. For more information, call or visit the Special Services Office in the Student Services Building, 894-9611 ext. 2529.

D. Nondiscrimination Policy: South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX 79336. Phone number 806-716-2360.

E. Sexual Misconduct: It is important for you to know that all faculty members are mandated reporters of any incidents of sexual misconduct. That means that I cannot keep information about sexual misconduct confidential if you share that information with me. Dr. Lynne Cleavinger, the Director of Health & Wellness, can advise you confidentially as can any counselor in the Health & Wellness Center. They can also help you access other resources on campus and in the local community. You can reach Dr. Cleavinger at 716-2563 or lcleavinger@southplainscollege.edu or go by the Health and Wellness Center. You can schedule an appointment with a counselor by calling 716-2529.

F. Title IX Pregnancy Accommodations Statement: If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To <u>activate</u> accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact the Director of Health and Wellness at 806-716-2362 or email <u>cgilster@southplainscollege.edu</u> for assistance.

G. Campus Concealed Carry: Campus Concealed Carry - Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to the SPC policy at:

(http://www.southplainscollege.edu/human_resources/policy_procedure/hhc.php)

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

		Course Outline				
Week		I have a sentence of the sente				
WCCK	1/18 Mon	MIK In				
1	1/20, Wed	Introduction Review: Conic Sections and Quadratic Equations – Parabolas, Ellipses, & Hyperbolas Review: Parametric Equations – Graphing, Derivatives and Tangents, Relative Extrema, Area, Volume, Arc Length, Surface Area, & Centroids				
2	1/25, Mon	11.1 Vectors Trigonometric (Polar) Form of Complex Numbers 11.2 Vectors in Space				
	1/27, Wed	11.3 Dot Product 11.4 Cross Product				
3	2/1, Mon	Resultant Vectors				
	2/3, Wed	11.5 Lines and Planes in Space				
4	2/8, Mon12.1 Vector-Valued Functions12.2 Vector-Valued Functions – Calculus12.3 Velocity & Acceleration					
	2/10, Wed	TEST 1 (Vectors, Ch 11)				
5	2/15, Mon12.3 Velocity & Acceleration contd. 12.4 Tangent & Normal Vectors (AcceleraTioN)					
Э	2/17, Wed	12.4 Tangent & Normal Vectors (AcceleraTioN) contd.12.5 Arc Length & Curvature				
6	2/22, Mon12.5 Curvature Contd. (Torsion & TNB frame) 11.6 Surfaces in Space (Cylinders and Quadric Surfaces) Space Coordinates & Surface of Revolution					
	2/24, Wed	Review: Polar Equations – Coordinates, Equations, and Graphing 11.7 Cylindrical and Spherical Coordinates				
7	3/1, Mon	 13.1 Functions of Several Variables 13.3 Partial Derivatives 13.5 The Chain Rule: Implicit Differentiation (only) 13.6 Directional Derivatives & Gradients 				
		TEST 2 (Vector-Valued Functions, Ch 12)				
	3/3, Wed	13.6 Directional Derivatives & Gradients contd.13.7 Tangent Planes & Normal Lines				
8	3/8, Mon	13.8 Extrema of Functions of Several Variables 13.9 Applications of Extrema of Multivariable Functions				
ð	3/10, Wed	13.9 Applications of Extrema of Multivariable Functions contd.13.10 Lagrange Multipliers				
	3/15 - 3/19	Spring Break				
9	9 3/22, Mon 14.1 Area in the Plane (Double Integrals) 14.2 Double Integrals & Volume 14.3 Polar Coordinates – Double Integrals					
	3/24, Wed	TEST 3 (Multi-Variable Functions, Ch 13)				
10	3/29, Mon	14.3 Polar Coordinates – Double Integrals contd. 14.4 Centers of Mass & Moments of Inertia				
	3/31, Wed	14.6 Triple Integrals in Rectangular Coordinates 14.7 Triple Integrals in Cylindrical and Spherical Coordinates				
	4/2, Fri	EASTER				

		Course Outline					
		This schedule is tentative and subjective to change. Changes will be announced in class.					
Week		Topics and Sections Covered					
11	4/5. Mon	14.8 Jacobian					
	175, 1000	14.5 Surface Area					
	4/7, Wed	15.1 Vector Fields					
10	4/12, Mon	TEST 4 (Multiple Integration, Ch 14)					
12	4/14, Wed	15.2 Line Integrals					
13	4/19, Mon	15.3 Conservative Vector Fields & Independence of Path					
	4/21, Wed	15.4 Green's Theorem					
14	4/26, Mon	15.5 Parametric Surfaces					
	4/28, Wed	15.6 Surface Integrals					
15	5/3, Mon	15.7 Divergence Theorem					
	5/5, Wed	15.8 Stoke's Theorem					
16	5/10	FINAL EXAM:	Monday	8 – 10 a			

South Plains College Common Course Syllabus: MATH 2415 Revised August 2020

Department: Mathematics, Engineering, and Computer Science

Discipline: Mathematics

Course Number: MATH 2415

Course Title: Calculus III

Available Formats: conventional/flex

Campuses: Levelland and Reese

Course Description: Differentiation and integration of transcendental functions; parametric equations and polar coordinates; techniques of integration; sequences and series; improper integrals.

Prerequisite: Successful completion with a grade of 'C' or better in MATH 2414

Credit: 4 Lecture: 3 Lab: 2

Textbook: None

Supplies: Please see the instructor's course information sheet for specific supplies.

This course partially satisfies a Core Curriculum Requirement: None

Core Curriculum Objectives addressed:

- **Communications skills**—to include effective written, oral and visual communication
- **Critical thinking skills**—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- Empirical and quantitative competency skills—to manipulate and analyze numerical data or observable facts resulting in informed conclusions

Student Learning Outcomes: Upon completion of this course and receiving a passing grade, the student will be able to:

- 1. Perform calculus operations on vector-valued functions, including derivatives, integrals, curvature, displacement, velocity, acceleration, and torsion.
- 2. Perform calculus operations on functions of several variables, including partial derivatives, directional derivatives, and multiple integrals.
- 3. Find extrema and tangent planes.
- 4. Solve problems using the Fundamental Theorem of Line Integrals, Green's Theorem, the Divergence Theorem, and Stokes' Theorem.
- 5. Apply the computational and conceptual principles of calculus to the solutions of real-world problems.

Student Learning Outcomes Assessment: A pre- and post-test questions will be used to determine the extent of improvement that the students have gained during the semester

Course Evaluation: There will be departmental final exam questions given by all instructors.

Attendance/Student Engagement Policy: Attendance and effort are the most important activities for success in this course. The instructor maintains records of the student's engagement throughout the semester. The student will be allowed to miss twenty percent (20%) of class assignments for the semester, *for any reason*. Should this number be exceeded, the instructor has the right to drop the student with a grade of F or an X, depending on the instructor's discretion.

Plagiarism violations include, but are not limited to, the following:

- 1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
- 2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
- 3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
- 4. Missing in-text citations.

Cheating violations include, but are not limited to, the following:

- 1. Obtaining an examination by stealing or collusion;
- 2. Discovering the content of an examination before it is given;
- 3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;
- 4. Entering an office or building to obtain an unfair advantage;
- 5. Taking an examination for another;
- 6. Altering grade records;
- 7. Copying another's work during an examination or on a homework assignment;
- 8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
- 9. Taking pictures of a test, test answers, or someone else's paper.

COVID Syllabus Statement: Should be provided by the Vice-President of Student Services over email.

Student Code of Conduct Policy: Any successful learning experience requires mutual respect on the part of the student and the instructor. Neither instructor nor student should be subject to others' behavior that is rude, disruptive, intimidating, aggressive, or demeaning. Student conduct that disrupts the learning process or is deemed disrespectful or threatening shall not be tolerated and may lead to disciplinary action and/or removal from class.

Diversity Statement: In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

Disability Statement: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

Nondiscrimination Policy: South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student

Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX 79336. Phone number 806-716-2360.

Title IX Pregnancy Accommodations Statement: If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To <u>activate</u> accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact the Director of Health and Wellness at 806-716-2362 or <u>email cgilster@southplainscollege.edu</u> for assistance.

Campus Concealed Carry: Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations and Frequently Asked Questions, please refer to the Campus Carry page

at: http://www.southplainscollege.edu/campuscarry.php

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

SPC Bookstore Price Match Guarantee Policy: If you find a lower price on a textbook, the South Plains College bookstore will match that price. The difference will be given to the student on a bookstore gift certificate! The gift certificate can be spent on anything in the store.

If students have already purchased textbooks and then find a better price later, the South Plains College bookstore will price match through the first week of the semester. The student must have a copy of the receipt and the book has to be in stock at the competition at the time of the price match.

The South Plains College bookstore will happily price match BN.com & books on Amazon noted as *ships from and sold by Amazon.com*. Online marketplaces such as *Other Sellers* on Amazon, Amazon's Warehouse Deals, *fulfilled by* Amazon, BN.com Marketplace, and peer-to-peer pricing are not eligible. They will price match the exact textbook, in the same edition and format, including all accompanying materials, like workbooks and CDs.

A textbook is only eligible for price match if it is in stock on a competitor's website at time of the price match request. Additional membership discounts and offers cannot be applied to the student's refund.

Price matching is only available on in-store purchases. Digital books, access codes sold via publisher sites, rentals and special orders are not eligible. Only one price match per title per customer is allowed.

Note: The instructor reserves the right to modify the course syllabus and policies, as well as notify students of any changes, at any point during the semester.

MATH 2415 (4:4:1)

CALCULUS III

MATHEMATICS DEPARTMENT

Division of Arts & Sciences

South Plains College

SPRING 2021

Shirley Davis