

## SYLLABUS – MAT 267 – Semester – Year – SLN GOES HERE

**Course Title:** Calculus For Engineers III; **Credits:** 3; **Prerequisites:** MAT 266 or MAT 271 with C or better; **Textbook:** Essential Calculus Early Transcendentals 2e, James Stewart, Brooks/Cole publisher

### Faculty Information:

**Name:** .....; **Office:** .....; **Email address:** ..... ; **Office hours:** .....

**Catalog Description:** Vector-valued functions of several variables, partial derivatives, multiple integration;  
**Course Overview:** The purpose of this course is to extend the ideas of single variable calculus to higher dimensions. Vectors and their basic operations are introduced and used in physical applications. The idea of vectors is then generalized to vector-valued functions of several variables. Space curves and common surfaces are analyzed. The central part of the course is the study of functions of several variables. The concepts of partial derivative, directional derivative, gradient, divergence and curl are introduced. Students will then learn how to set up and evaluate multiple integrals, line integrals and surface integrals over various domains.

**Learning Outcomes:** At the completion of this course, students will be able to:

- Perform vector operations and use them to solve applied problems.
- Generalized the idea of vectors to vector-valued functions.
- Analyze space curves and common surfaces.
- Evaluate and interpret partial derivatives, directional derivatives, gradient, curl and divergence.
- Set up and evaluate multiple integrals, line integrals and surface integrals.

**Course Time Commitment:** This three-credit course requires approximately 135 hours of work. Please expect to spend around 18-24 hours each week preparing for and actively participating in this course.

**Grading:** A: [90,100]; B: [80,90); C: [70,80); D: [60,70); E: [0,60).

**Grading Weights:** Exams 1 & 3: 10% each; Final Exam (Exam 4): 30%; Midterm (Exam 2): 30%, Webwork: 20%.

## Course Topics, Schedule

Yellow: suggestions!
Green: unproctored tests.
Blue: Proctored Assessments!

Week of...	Topics	Notes
1	10.1: 3D Coordinate System 10.2: Vectors	
2	10.3: The Dot Product 10.4: The Cross Product 10.5: Equations of Lines and Planes 10.6: Cylinders & Quadric Equations	<i>Try to work a little ahead!</i>
3	10.7: Vector Functions & Space Curves 10.8: Arc Length 10.9: Motion in Space: Velocity & Acceleration 11.1: Functions of Two Variables 11.3: Partial Derivatives	<b>Midterm 1: (10.1-10.9) unproctored.</b>
4	11.4: Tangent Planes and Linear Approximations 11.5: The Chain Rule 11.6: Directional Derivatives and the Gradient 11.7: Maximum and Minimum Values	
5	12.1: Double Integrals over Rectangles 12.2: Double Integrals over General Regions 12.3: Double Integrals in Polar Coordinates	<b>Midterm 2: (emphasizing 11.1-11.7, but using concepts back to 10.1) PROCTORED.</b>
6	12.5: Triple Integrals 12.6: Triple Integrals in Cylindrical Coordinates 12.7: Triple Integrals in Spherical Coordinates	<b>Midterm 3: (emphasizing 12.1-12.7) but using concepts back to 10.1) unproctored.</b>
7	13.1: Vector Fields 13.2: Line Integrals 13.3: Fundamental Theorem of Line Integrals (FTLI) 13.4: Green's Theorem 13.5: Curl and Divergence	
7.5	13.6: Parametric Surfaces and Their Area 13.7: Surface Integrals The final!	<b>Final Exam: proctored</b>

**TESTING:** Midterm 1 & 3 are not proctored, Midterm 2 & 4 are proctored.

- The tests will be in Webwork.
- Firefox is the recommended browser.
- The test will be available from 12:00AM MST to 11:59PM MST on the day of the test. You can access the test any time during this 24-hour period, however, once you open the test, you will have 2 hours to complete it, provided you access the test before 09:59PM MST. It is your responsibility to be aware of the time difference if you are located in a different time zone.
- You will have two submissions available. This does not mean you take the exam twice. It means you submit your exam for grading once. The system will indicate which ones you missed, and you will then have a chance to correct those before submitting a second time. All of this must be done within the two-hour time limit.

**IMPORTANT:**

1. To avoid accidentally clicking on the test and starting the timer, the test is password protected.
2. Each problem in the test contains a *Preview Problem* button. Please click the *Preview Problem* button after you enter each answer so that it will be recorded in the log files (in case the internet goes down or there are other technical issues).
3. The *Grade Test* button is located at the end of the test. After clicking on *Grade Test* for your first attempt, you will be able to see which questions are incorrect. **WRITE DOWN WHICH QUESTIONS ARE INCORRECT BEFORE YOU START WORKING ON FIXING THEM.** From this point on do not click *Preview* or *Enter*. Just finish answering the test and click *Grade Test*.
4. Do not log out or click on the Back button while taking the test.
5. **While taking the test, do not leave the test website and open WeBWorK in another tab. Equivalently, be sure you have logged out of any previous WeBWorK sessions from another computer or device before starting the test. If you do have WeBWorK open in another window, you will be logged out from the test and all the answers you entered will disappear.**

**Graphing Calculator:** A graphing calculator is required for this course. If you already have a graphing calculator, you may use it. Examples of highly recommended models are the TI-*nspire* & TI 83/84 or Casio 9850GB Plus. Calculators that do symbolic algebra, such as the Casio FX2, Casio 9970Gs, TI-89, TI-92, or TI-*nspire* CAS **cannot** be used in class or during an exam.

**Webwork:** Webwork is an online homework system that gives instant feedback to the students on their answers. We encourage you to solve these problems first on paper. If you click on **Get a hard copy** you can get a printout of all the problems in the set.

Homework will be a very important part of your learning. You cannot expect to solve all assigned problems easily. Some problem will require more time and effort. Even if you are unable to solve the entire problem, any time spent on trying is not wasted. Try to emphasize understanding rather than memorization when you are working on the problems. Although it is an online course you still need to be able to explain all of your steps on your homework solutions. Expect to spend 15-20 hours weekly on homework.

**Communicating With the Instructor:** *Piazza* is an online platform that facilitates interaction among students and instructors in an efficient and intuitive manner. *Piazza* helps students who are stuck on homework problems and get unstuck with the help of their classmates and professors.

*Piazza* is free and seamlessly merged in with the learning platforms for our icourses and courses. Students post all questions to *Piazza* and get the answers to their questions from their classmates and professors. I won't answer HW questions emailed directly to me. Prior to posting a question, please check the syllabus, announcements, and existing

posts. If you do not find an answer, post your question. You are encouraged to respond to the questions of your classmates. Email questions of a personal nature to your instructor. You can expect a response within 48 hours.

**Piazza Code of Conduct:** Piazza is an online forum site specifically created for math and science courses. It features a clean interface that makes following threads easier, the threads are sortable and searchable, and provides the ability to enter symbolic mathematics. It is a collaborative site in which students are encouraged to post questions and other students are encouraged to offer assistance. The instructor and teaching assistants monitor Piazza regularly, offering feedback whenever necessary.

Piazza is built into every online course shell and is a required aspect of the course. The instructor will also post messages to the class in this site. Thus, it is the student's responsibility to be properly signed up in Piazza as directed by the instructor.

- All questions related to classwork should be posted to Piazza. Any homework or classwork questions emailed directly to the instructor will not be answered.
- Please include the section number and question number in the header (e.g. Section 11.2, #7).
- Please include a couple lines of your work. You may also photograph your written work and insert the image within the post. Please trim the image size if possible.
- Please be courteous at all times. No vulgar, demeaning, or aggressive language will be tolerated.
- Do not use Piazza to air grievances or to campaign.
- Do not use Piazza for personal messages. Those should be sent by email to the instructor directly.
- Stay on topic. Do not use Piazza for discussions not related to this class.
- You can post anonymously to fellow students, but I can see your name. No changing your name or using avatars.
- Keep a civil and friendly atmosphere. Piazza works best when there are a lot of students willing to engage the forum.
- Please do not expect immediate replies. Instructors usually check the forum daily. In the meantime, other students are encouraged to add feedback and commentary. Instructors may also deliberately stay in the background so as to promote student-led discussions.

Failure to adhere to these requirements may result in your posting privileges being revoked.

**Online Course:** This is an online course. There are no face-to-face meetings. You can log into your course via MyASU or <https://my.asu.edu>.

**Email and Internet:** ASU email is an official means of communication among students, faculty, and staff. Students are expected to read and act upon email in a timely fashion. Students bear the responsibility of missed messages and should check their ASU-assigned email regularly. *All instructor correspondence will be sent to your ASU email account.*

**Late or Missed Assignments:** Notify the instructor **BEFORE** an assignment is due if an urgent situation arises and the assignment will not be submitted on time. Published assignment due dates (Arizona Mountain Standard time) are firm. Please follow the appropriate University policies to request an accommodation for religious practices or to accommodate a missed assignment due to University-sanctioned activities.

**Submitting Assignments:** Online Homework will be submitted online via the internet using the online homework system, Webwork. Do not submit an assignment via email.

**Drop and Add Dates/Withdrawals:** This course adheres to a compressed schedule and may be part of a sequenced program, therefore, there is a limited timeline to drop or add the course. Consult with your advisor and notify your instructor to add or drop this course. If you are considering a withdrawal, review the following ASU policies: Withdrawal from Classes, Medical/Compassionate Withdrawal, and a Grade of Incomplete.

**Grade Appeals:** Grade disputes must first be addressed by discussing the situation with the instructor. If the dispute is not resolved with the instructor, the student may appeal to the department chair per the University Policy for Student Appeal Procedures on Grades.

**Student Conduct and Academic Integrity:** Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal. For more information, see <http://provost.asu.edu/academicintegrity>. Additionally, required behavior standards are listed in the Student Code of Conduct and Student Disciplinary Procedures, Computer, Internet, and Electronic Communications policy, and outlined by the Office of Student Rights & Responsibilities. Anyone in violation of these policies is subject to sanctions.

Students are entitled to receive instruction free from interference by other members of the class. An instructor may withdraw a student from the course when the student's behavior disrupts the educational process per Instructor Withdrawal of a Student for Disruptive Classroom Behavior.

Appropriate online behavior (also known as *netiquette*) is defined by the instructor and includes keeping course discussion posts focused on the assigned topics. Students must maintain a cordial atmosphere and use tact in expressing differences of opinion. Inappropriate discussion board posts may be deleted by the instructor.

The Office of Student Rights and Responsibilities accepts incident reports from students, faculty, staff, or other persons who believe that a student or a student organization may have violated the Student Code of Conduct.

**Prohibition of Commercial Note Taking Services:** In accordance with ACD 304-06 Commercial Note Taking Services, written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes. Notes must have the notetaker's name as well as the instructor's name, the course number, and the date.

**Course Evaluation:** Students are expected to complete the course evaluation. The feedback provides valuable information to the instructor and the college and is used to improve student learning. Students are notified when the online evaluation form is available.

**Syllabus Disclaimer:** The syllabus is a statement of intent and serves as an implicit agreement between the instructor and the student. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. Please remember to check your ASU email and the course site often.

**Accessibility Statement:** In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act as amended (ADAAA) of 2008, professional disability specialists and support staff at the Disability Resource Center (DRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. Qualified students with disabilities may be eligible to receive academic support services and accommodations. Eligibility is based on qualifying disability documentation and assessment of individual need. Students who believe they have a current and essential need for disability accommodations are responsible for requesting accommodations and providing qualifying documentation to the DRC. Every effort is made to provide reasonable accommodations for qualified students with disabilities. Qualified students who wish to request an accommodation for a disability should contact the DRC by going to <https://eoss.asu.edu/drc>, calling (480) 965-1234 or emailing [DRC@asu.edu](mailto:DRC@asu.edu). To speak with a specific office, please use the following information:

**ASU Online and Downtown Phoenix Campus**  
University Center Building, Suite 160  
602-496-4321 (Voice)

**Polytechnic Campus**  
480-727-1165 (Voice)

**West Campus**

University Center Building (UCB), Room 130  
602-543-8145 (Voice)

**Tempe Campus**

480-965-1234 (Voice)

**Computer Requirements**

This course requires a computer with Internet access and the following:

- Web browsers (Chrome, Internet Explorer, Mozilla Firefox, or Safari)
- Adobe Acrobat Reader (free)
- Adobe Flash Player (free)
- Microphone (required) and speaker

**Technical Support:** This course uses Blackboard to deliver content. It can be accessed through MyASU at <http://my.asu.edu> or the Blackboard home page at <https://myasucourses.asu.edu>. To monitor the status of campus networks and services, visit the System Health Portal at <http://syshealth.asu.edu/>. To contact the help desk call toll-free at 1-855-278-5080.

**Student Success**

This is an online course. To be successful:

- check the course daily
- read announcements
- read and respond to course email messages as needed
- complete assignments by the due dates specified
- communicate regularly with your instructor and peers
- create a study and/or assignment schedule to stay on track