# **Instructor: Sudha Kolathu- Parambil**

### Best way to contact me: Message me through CANVAS Inbox or

**e-mail** **me** skolathuparambil@sierracollege.edu

**Office hour:** Tuesdays 10-11 AM through [zoom](https://cccconfer.zoom.us/j/95944163874)

**Communication:** I will be communicating with you through CANVAS announcements, Inbox, e-mail, and Modules/weekly task.

### Course Description:

Introduction to differential and integral calculus, with emphasis on applications in the fields of business, economics, and social sciences. Includes: concepts of a function, limits, derivatives, integrals of polynomial, exponential and logarithmic functions, optimization problems, and calculus of functions of more than one variable. Not recommended for students with credit for MATH 30.

### Textbook:

**Bittinger’s *Calculus and Its Applications: Brief Version, 12e by Pearson***

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| Calculus and Its Applications, Brief Version Plus MyLab Math with Pearson eText - 18-Week Access Card Package, 12th Edition | <https://www.pearson.com/store/p/calculus-and-its-applications-brief-version/P100001299562>MyLab Math with Pearson eText -- 18 Week Instant Access -- for Calculus and Its Applications: Brief Version, ISBN-13:  9780135960387*Homework, quizzes and exams will be assigned through MyLab Math.* |

### Prerequisites:

Prerequisite: Completion of MATH D with grade of "C" or better or placement by matriculation assessment process
Advisory: Completion of MATH 12 strongly recommended, especially for students who have not recently taken MATH D or take Math42 Support class concurrently.

### Student Learning Outcomes:

Upon the successful completion of this course, you will have the opportunity to learn the following:

1. Evaluate limits of functions using limit laws and graphical methods.
2. Calculate derivatives, partial derivatives, and integrals.
3. Translate, model, and solve applied business problems utilizing derivatives and integrals.
4. Present clear, complete, accurate, and sufficiently detailed solutions to communicate reasoning and demonstrate the method of solving business problems.


### Calculator:

You need a Scientific Calculator (TI-30) with a “log” button. Cellphone calculators, graphing calculators and any software/app which has derivative/integration features will not be allowed for the exams and quizzes.

### Course Objectives:

1. Construct and graph functions of various types (linear, quadratic, rational, exponential, logarithmic, and logistic) from real world information.
2. Evaluate limits at a point, at infinity, and compute derivatives using the limit definition.
3. Calculate derivatives of polynomial, rational, radical, exponential, and logarithmic functions using basic derivative rules including sum, difference, product, quotient, and chain rules. Use of the chain rule includes implicit differentiation.
4. Solve business application problems involving demand, cost, revenue, profit, and marginality.
5. Investigate real world functions using derivatives to find such information as optimal points, rates of change, and shape of graph.
6. Solve exponential equations, logarithmic equations and application problems related to exponential growth and decay, as well as logistic and learning curves.
7. Definite integrals - apply integration techniques to determine the area under a curve, determine consumer and producer's surplus, and solve basic differential equations.
8. Indefinite integrals - investigate antiderivatives to develop formulas for integration.
9. Find both definite and indefinite integrals by using the general integral formulas, integration by substitution, and other integration techniques.
10. Calculate partial derivatives of two variables and use to solve optimization problems in three dimensions.
11. Analyze the meaning of the derivative and the integral in the context of real-world situations for both business and economics applications.

### Grading:

Quizzes: 30 % (best 5 scores out of 6)

Homework: 12 % (7 graded Homework)

Discussion: 6 % (best 5 scores out of 7)

Assignments 2 %

Exam-1: …….… 25 % (Chapters R, 1, 2, and 3)

Exam-2: ……. 25 % (Chapters 4, 5, and 6)
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TOTAL: ............. 100 %

There will be a mandatory quiz on CANVAS called the "Ticket to take the exam" before each exam. This quiz explains the rules/policies of the exam.  Your grade for the exam will be counted as "0" without passing this quiz.

There will be a practice homework and graded homework assignment on MyLabMath. There is no grade for the practice homework. Check MyLabMath for the due dates of homework/quizzes/exams. You can make up a missed quiz within three days with a 30% penalty. There is no make-up for the exams. If you miss any exam, please contact me within 24 hours explaining the reason for missing the exam. All the quizzes will be available a week before the due date. Exams will be available three days before the due date.

Your overall course letter grade will be determined by the following scale.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A: 90% and above | B: 80% - 89% | C: 70% -79%  | D: 60% - 69% | F: below 60% |

### Special Accommodations:

**If you are a student with a learning or physical disability or have special needs, please let me know as soon as possible what accommodations are needed. Also, please send me the documentation for the accommodation.**

**Please respect everyone in the classroom while communicating online.** [Please watch this video for more information.](https://apps.3cmediasolutions.org/oei/modules/communication/story/)

### **Attendance Policy:** This class is completely online (Asynchronous).

* If you fail to complete the Syllabus quiz, introduce yourself to your class with your photo and the homework from sections R1 and R2 on MyLabMath by January 256h, I will assume that you are not interested in this class, and you will be dropped from this class.
* If you are inactive in MyLabMath for 5 days without informing me of the reason for missing the class, you will be dropped from this class.
* If you are not making any progress in MyLabMath/not spending required amount of time doing your homework you will be dropped from this class.
* Students must participate in at least 5 discussions on CANVAS. If you miss more than two discussions assignment you will be dropped from the class for non-attendance.

### Academic Honesty Policy:

Some examples of Academic Dishonesty:

* Allowing other person to do your work.
* Using devices or aids that are not allowed during the quiz/test/exam.
* Copying from another or allowing another student to copy your own paper.
* Sharing the questions or answers of the quizzes/exams with the other person.
* Submitting another person’s work as your own work.

Please do not cheat. **Violations of these rules are grounds for disciplinary actions from the Disciplinary Officer which could result in suspension and expulsion from the college, see Board Policy 5500 and Administrative Procedure 5520.**

**Time needed for this class:** Students should spend an average of 10 hours per week for this class to receive an average grade in this class. Each group discussion will take 30 minutes-1 hour or more. Quizzes will take 1 hr 1.5 hrs. Exams will take 2 to 2.5 hrs. Plan on spending at least 2 hours per day to stay on track. Please make a study plan appropriate to your schedule. Decide on when and how you are going to complete this course successfully and stick with that plan.

### Design of this online class:

Your weekly tasks are organized under “Modules” (tab on the left side). Please check each week’s module on CANVAS and work accordingly. Weekly lecture videos are under weekly module. More videos on topics are available on MyLabMath. Weekly discussions, assignments, ticket to take the exam etc. will be assigned through canvas. There will be 37 practice homework (no grade), 7 graded Homework assignments, 6 quizzes, and two exams. All these are assigned through MylabMath. This course uses a test proctoring software which requires a webcam. You might end up failing this class without practicing the homework problems.

**Exam-1 March 23rd (Sections: R1-R6, 1.1- 1.8, 2.1-2.4, 3.1-3.5)**

**Exam-2 May 18th (Sections: 3.6, 4.1-4.6, 5.1, 5.7, 6.1, 6.2, 6.3, 6.5)**

Title IX: As an instructor, one of my responsibilities is to help create a safe learning environment for my students and for the campus as a whole. So that the college can provide students with appropriate support, services and assistance, I am ​encouraged to connect students who share any instances of sexual harassment, sexual violence, and/or other forms of prohibited discrimination with Title IX Campus Advocates. ​ The Title IX Campus Advocates are confidential employees available to provide counseling, crisis intervention, reporting options, and connection to campus and community resources.

Additionally, our local community organizations provide confidential support and resources to survivors of sexual assault and intimate partner violence and available 24/7.

* [STAND UP PLACER](https://www.standupplacer.org/) (Placer County) (800) 575-5352
* [Community Beyond Violence](https://cbv.org/) (Nevada County) (530) 272-3467
* [Sierra Community House](https://sierracommunityhouse.org/) (Tahoe/Truckee) (800) 736-1060
* [WEAVE](https://www.weaveinc.org/) (Sacramento County) (916) 920-2952
* [Sierra College Title IX help](https://www.sierracollege.edu/about-us/admin-services/title-ix/get-help.php)
* [Title IX Resources](https://www.sierracollege.edu/about-us/admin-services/title-ix/resources.php)

### Important dates:

Feb 18th -20th Presidents Day (Campus closed)

Feb 6th Add/ drop/refund deadline

April 8th Last day to withdraw with a “W”

April 11th -17th Spring Break

May 30th Memorial Day

Disclaimer: This Online course is offered through CANVAS and using MyLabMath. All information on the syllabus is subject to change if the instructor finds it necessary. Any changes will be announced through CANVAS announcement. This is a short version of the syllabus. Please check CANVAS for the complete syllabus with more detail.