DVC – Math 182 Syllabus

"You can't direct the wind – but you can adjust the sails."

Course: Math 182 – Calculus: Management/Life Science & Social Science

Section: 3172

Term: Fall 2020, [Aug 24th – Dec 16th]

Time: **Online**: MW 8:55 am – 9:55 am

Instructor: Mr. Narin

Office Hours: MW 11 am – 12 pm + by appt.

Class Website: **www.MathWithSteve.com**

Email: **SteveNarin314@gmail.com**

DVC Online Math Lab Hours [to be determined]

Monday–Thursday: 8:00am – 8:20pm

Friday: 10:00am – 1:50pm
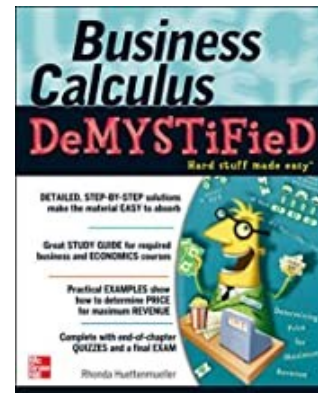
Click: *Math Lab Tutoring*

Required

Text:

Business Calculus Demystified
Rhonda Heuttenmueller
ISBN 0-07-145157-9
Click: *Amazon.com* or

DVC Book Center

Calculator: A simple scientific calculator will be perfect for this class – just look for the LOG button – TI recommended; it's about $13 (less on eBay), and will be allowed on every quiz and test. No graphing calculators (or anything that does algebra or calculus) allowed.

We will also be using a graphing program on the web called Desmos. There's nothing to install -- it runs right in your browser.

$y = x^3 - 3x^2 + 4$

Browser: It is strongly recommended that you use Google Chrome for your web browser. Our class website requires it, and I am pretty sure that the Khan Academy website no longer supports Internet Explorer.

Platform: As of right now, I have no intention of using Canvas for our online class, but if you have an idea on how we could use it, please let me know. So right now, everything you need for this class will be located at the *www.MathWithSteve.com* website. [No username or password required]. The synchronous, online communications will be through Zoom.

Email: As a DVC college student, you are required to check your school email account on a regular basis; that means at least a few times each day. This is imperative, considering that this is an online class. Also, let me know if you'd prefer that I send your emails to an account other than the college account.

Computer, Printer, and Scanning: You must have

1. a **computer or tablet** using Google Chrome, or an extremely compatible substitute browser. And it must obviously run Zoom.

2. a **printer** for printing out assignments, quizzes, and tests.

3. a way to **scan** your printouts for submission to me via an email attachment. I see two ways to scan: a flatbed scanner that can scan to the pdf format, or a good program for your smartphone or iPad (check out Adobe Scan) that will take a clear picture and convert it to *pdf*.

Grading Components

We will use a point system for this class. That way, you'll always be able to calculate your grade at any time. The points will be allocated in such a way that the Activities will constitute *about* 15% of the grade, the Quizzes about 35%, and the Tests about 50%.

Homework

Homework will be assigned primarily from the Online Practice portion of our class website, but also from online textbooks and other websites.

The problems I assign are designed to inform you as to what skills and concepts you are supposed to be gaining from this class. In

other words, you need to do as much homework as you need to do, in order to achieve the degree of success that you desire. This might mean you do just a few of each type of problem until you understand the concept well; it might mean you do most or all of the problems, or even more than all the problems. In short, it's up to you to discover the homework strategy that suits your personal learning style. Because of this policy, homework is not counted toward your grade.

Activities

These are miscellaneous assignments assigned weekly that you will hand in for points. I've never previously included these as a component of my math courses. But in a virtual world, I'm confident that these have the potential to be a valuable part of your Business Calculus education. They will be assigned toward the end of the week, and will be due by Sunday at midnight.

Quizzes

There will be two quizzes each week, which will be posted Tuesday and Thursday mornings. Sometimes you'll submit the quizzes back to me (through scanning), and sometimes you'll grade them yourselves and then inform me of your grade. Both quizzes will be due by Friday at midnight; this is designed to provide the flexibility you might need to work around your family and employment obligations.

Tests

There will be [2 or 3 or 4] major tests. The tests will contain some multiple-choice questions, but for the most part, "show your work" questions (with partial credit possible). As for how they will be administered and collected, I'm still working on that. It partially depends on whether students and faculty might be able to go to campus. If you have any ideas on this issue, I would love to hear from you.

Letter Grades

A – 90% and up

B – 80% to 89%

C – 70% to 79%

D – 60% to 69%

F – below 60%

Live as if you were to die tomorrow.

Learn as if you were to live forever.

Mahatma Gandhi

Academic Dishonesty

Click the following link: *Academic Integrity Policy*

That document should answer all your questions. Please note that – if caught cheating – the consequences will be as harsh as the DVC policy allows.

Student Learning Outcomes and Course Content

From the DVC Catalog:

This is the first in a two-term calculus sequence for management, life science, and social science majors. Topics include the derivative and its applications (including curve sketching, optimization, and rates of change), an introduction to the integral (including Riemann sums and the Fundamental Theorem of Calculus) and its applications. C-ID MATH 140, CSU, UC (credit limits may apply to UC-see counselor)

Student Learning Outcomes

A. Find the derivatives of polynomial, rational, exponential, and logarithmic functions.

B. Find the derivatives of functions involving constants, sums, differences, products, quotients, and the chain rule.

C. Sketch a graph of functions using horizontal and vertical asymptotes, intercepts, and first and second derivatives to determine intervals where the function is increasing and decreasing, maximum and minimum values, intervals of concavity and points of inflection.

D. Analyze the marginal cost, profit, and revenue when given the appropriate function.

E.   Determine maxima and minima in optimization problems using the derivative.

F.   Use derivatives to find rates of change and tangent lines.

G.   Use calculus to analyze revenue, cost, and profit.

H.   Find definite and indefinite integrals by using the general integral formulas, integration by substitution, and other integration techniques;

I.   Use integration in business and economics applications.

Course Content

A.   Functions and their graphs (including exponential and logarithmic functions)

B.   Limits and applications drawn from business, economics, the social sciences, biology, health and medicine, and/or environmental studies

C.   Slopes (including tangent lines) and rates of change and applications drawn from business (marginal cost, profit and revenue), economics, the social sciences, biology, health and medicine, and/or environmental studies

D.   The Derivative, including intuitive limit definition

E.   Techniques of differentiation, product, quotient, and chain rule, implicit differentiation

F.   Applications of the derivative to graphing, optimization problems, and related rates problems

G.   Derivatives and integrals involving exponential and logarithmic functions, and applications of these drawn from business, economics, the social sciences, biology, health and medicine, and/or environmental studies

H.   The indefinite integral
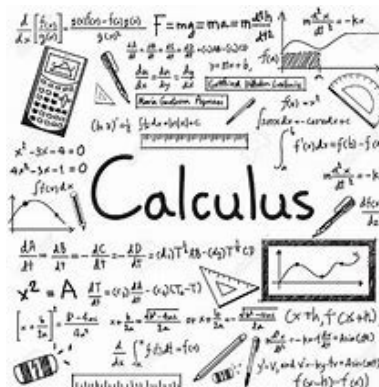
I.   Multiple techniques of integration including substitution

J.   Riemann sums, the definite integral, approximating the definite integral as a sum, the fundamental theorem of calculus

K.   Applications of the definite integral drawn from business, economics, the social sciences, biology, health and medicine, and/or environmental studies

L.   Computing areas, the area between curves, and applications drawn from business, economics, the social sciences, biology, health and medicine, and/or environmental studies.

"Wisdom begins in wonder."

Socrates