Calculus for Business and Life Sciences (Hybrid)

Math 1743

Presented by Professor Ernest Gobert

Calculus for Business and Life Sciences (Hybrid) Math 1743

Why was this course created and how I ended up teaching it

- OCCC faculty were encouraged to look into this new course format
- We could teach two courses for the time and space of a traditional course, given the enrollment number at that time
- Many of our Business Calculus students were/are from OU
- ► Gas price was at an all-time high for commuting students
- I volunteered to look into this new format being the course coordinator of Business Calculus 1 and 2 and have been the main faculty teaching it ever since

Calculus for Business and Life Sciences (Hybrid)

Coursework flow



Student Statistics Study Guide

Calculus for Business & Life Sciences

Student Study Guide



Oklahoma City Community College

Professors Daniel Bakewell & Ernest Gobert

42: Multivariable Optimization - the Algebraic Method:

Given a 2-variable function f(x,y), its graph typically is a 3D surface like the one below:



It is fairly straightforward to locate graphically the approximate locations of local maximum/minimum points and even saddle points. However, when it is necessary to find the exact locations of those points, at our math level, we have no other options but to compute these points algebraically.

Computing Critical Points of a 3D Function f(x,y):

Remark:

Given a function f(x,y), we say a point (x_1, y_1) is a critical point of this function, if either of the two conditions below are true:

- 1. $f_x(x_1, y_1) = f_y(x_1, y_1) = 0$ (both partial derivatives of f(x,y) are zero at this point)
- 2. Either $f_x(x_1, y_1)$ or $f_y(x_1, y_1)$ is undefined (we do not really encounter this type of critical points in this course)

My hybrid course compared to my same course in other formats



Observations:

- How self-motivated a student is plays a crucial roll in his/her academic outcome in this course format
- Students enjoy the flexibility of class schedule
- Faculty has to do a great job making sure students will learn on their own outside of classroom
- Timely communication through email and phone is absolutely essential
- Faculty must communicate to students on first day of class what is expected of them and that students will be held to that standard
- Faculty must invest in developing a full set of course notes and must make sure that students do utilize it.