Casper College Course Syllabus

Course Number And Title: MATH 2355-01 Business Calculus II
Semester / Year: Fall 2015
Lecture Hours: 4 **Lab Hours**: 0 **Credit Hours**: 4

Class Time: 9:00 – 9:50 a.m. **Days:** M,T,W,Th **Room:** PS 216

Instructor's Name: Nick DeSalvo **e-mail:** ndesalvo@caspercollege.edu

Instructor's Contact Information: Office #**:** PS 127 Phone: (307) 268-2504

Office Hours:
Mondays: 10:00 – 10:50 a.m.
Tuesdays: 10:00 – 10:50 a.m. and 1:00 – 1:50 p.m.
Wednesdays: 10:00 – 10:50 a.m.
Thursdays: 10:00 – 10:50 a.m. and 1:00 – 1:50 p.m.
Fridays: 9:00 – 9:50 a.m. and 10:00 – 10:50 a.m.
Other times may be available by appointment.

Course Description: This is the second semester of a sequence especially formulated for students majoring in business and related fields. This course continues the study of single and multi-variable calculus emphasizing applications in business, social and behavioral or life sciences. Topics include integration in multiple variable functions, finance and optimization.

Statement of Prerequisites: A grade of "C" or better in MATH 2350 within the past year, or appropriate score on the Compass exam.

Goal: This class is designed to be a continuation of Math 2350, delving into more topics that include income stream and related economics topics and a short introduction into trigonometry and its applications into the world of business. As before, this book and class are maintaining the use of "real life" problems and will emphasize the use of technology and graphs to help you think and reason and draw conclusions.

Outcomes:
Solve problems using critical thinking and creativity. Use quantitative analytical skills to evaluate and process numerical data.

Course Objectives: Students should be able to

1. find the accumulation function for a given function and know how it relates to the Fundamental Theorem of Calculus.
2. use antiderivative rules.
3. evaluate definite and improper integrals, by hand and by calculator.
4. apply definite integrals to business problems.
5. take partial derivatives, and apply them to multivariable optimization problems.

6. apply the definite integral to find the mean and standard deviation of probability density functions and find the probability that x is in the interval [a,b].
7. find the area(s) between two functions.

Methodology: Each day homework problems will be assigned for practice. Approximately 13 times during the semester, assignments will be collected and graded. These may consist of pop quizzes, projects, homework problems from the text, supplemental problems handed out by the instructor, etc. Each assignment that is collected will be worth 10 points. At the end of the semester, your highest 10 scores will be kept, for a total of 100 points, and the other scores will be dropped. Assignments will not be accepted late – you have until the end of the day to get it to my office. If you do not have your assignment ready on the day it is due or if you are absent on the day a pop quiz is given, that will be one of the scores you will drop. You can miss about three assignments before it starts hurting your grade. If you are absent for two days or more (according to the Casper College catalog) due to accident, illness, etc., contact the dean of students and explain your reason. Your instructors will then receive a notice explaining your absence.

In addition to the assignments, there will be one or two projects and four (possibly five) 100-point exams. The exams will be announced ahead of time.

My policy on taking an exam late: Everyone has one chance to take an exam late, as long as you call and leave a message telling me why you aren't able to take the test on time, and take the exam in the Test Proctoring Center before the graded exams are handed back to the rest of the class. This option is to be used only for illness, emergencies, etc., and I reserve the right to refuse to allow someone to take a test late for non-emergencies, even if it is your first time (not being ready does not qualify as an emergency!). If you haven't taken the exam by the time the rest of the class has received their graded exams (or if you have already used up your one chance to take an exam late), then your final exam score will be doubled to replace the missed exam. If you know ahead of time that you will be absent on the day of an exam, arrangements can sometimes be made to take the exam early. If you are involved in a sport or club that may cause you to miss class time, please let me know in advance. Information about the Test Proctoring Center will be provided.

The comprehensive final exam will be worth 100 points and everyone must take it. If your final exam score is higher than your lowest score or your assignment total, I will double your final exam score and drop your lowest score. If your final exam score is your lowest score, I will not double it. In other words, the final exam is worth either 100 points or 200 points, depending on how well you do on it.

Evaluation Criteria: The total of your exams, assignments, projects, and final exam will be divided by the points possible. Your grade will be determined as follows: 90-100%=A, 80-89%=B, 70-79%=C, 60-69%=D, and 0-59%=F. If your average is less than one percentage point of the next grade, I will round up if you have demonstrated good attendance. (For example, if your percentage is 79.2% and you have missed only a few classes, I would be inclined to give you a B. A percentage of 79.0% would remain a C regardless of attendance).

Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.

Required Text, Readings, Materials:

- "Calculus Concepts, an Informal Approach to the Mathematics of Change" by Latorre, Kennelly, etc., 5th edition, published by Brooks/Cole.
- A graphing calculator is required. A TI-84 will be used for demonstration. Graphing calculators can be rented from the Math Learning Center if you don't want to purchase one. Bring your calculator to class every day. No calculators allowed during quizzes and exams that are on devices that can communicate with other devices (such as cell phones, tablets, laptops, etc.!)

Class Policies:

Last Date to Change to Audit Status or Withdraw with a W Grade: Thursday, November 12.

Electronics: No listening to music or texting during class time. Cell phones must be in silent/vibrate mode during class time, and can't be out during exams or quizzes. Laptops and tablets can be used during class for note taking or to access the eBook version of the textbook, except during exams and quizzes. If it is found that you are using the laptop for other purposes, it is expected that you will immediately shut down and put it away.

Where to Go for Help:

- My office. See the top of the syllabus for contact information and office hours.
- The Math Learning Center (also called the Math Lab) is a place you can go for help. Staff and student workers are there to answer questions, or you can go if you just need a place to do your math homework. The Math Learning Center is located in PS 104. The exact hours it is open will be announced, or you can look on the door. Make sure you get help as soon as you start having trouble!

Student Rights and Responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.
Chain of Command: If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.
Academic Dishonesty: (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.
Official Means of Communication: Casper College faculty and staff will employ the student's assigned Casper College email account as a primary means of communication. Students are responsible to check their account regularly.
ADA Accommodations Policy: If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor

located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu. The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

Tentative Calendar or Schedule Indicating Course Content:
(This schedule is tentative and subject to change.)

Review of derivative rules
5.1 An Introduction to Results of Change
5.2 Limits of Sums and the Definite Integral
5.3 Accumulation Functions
5.4 The Fundamental Theorem
5.5 Antiderivative Formulas for Exponential, Natural Log, and Sine Functions
Exam #1
5.6 The Definite Integral – Algebraically
5.7 Differences of Accumulated Change
5.8 Average Value and Average Rate of Change
5.9 Integration of Product or Composite Functions
6.1 Perpetual Accumulation and Improper Integrals
6.2 Streams in Business and Biology
Exam #2
6.3 Calculus in Economics: Demand and Elasticity
6.4 Calculus in Economics: Supply and Equilibrium
6.5 Calculus in Probability (part 1)
6.6 Calculus in Probability (part 2)
6.7 Differential Equations: Slope Fields and Solutions
6.8 Differential Equations: Proportionality and Common Forms
Exam #3
7.1 Multivariable Functions and Contour Graphs
7.2 Cross-Sectional Models and Rates of Change
7.3 Partial Rates of Change
7.4 Compensating for Change
Exam #4
8.1 Extreme Points and Saddle Points
8.2 Multivariable Optimization
8.3 Optimization under Constraints
8.4 Least-Squares Optimization
Exam #5 (if time permits)

Final exam is Monday, December 14, 8:00-10:00 a.m.