Casper College Course Syllabus

Course Number and Title: MATH 2355-01 Business Calculus II

Semester / Year: Fall 2006

Lecture Hours: 4 Lab Hours: 0 Credit Hours: 4

Class Time: 8:00 – 8:50 a.m. Days: M,Tu,W,Th Room: PS 214

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

Instructor’s Office #: PS 127 Phone: (307) 268-2504

Office Hours:
Mondays: 9:00 – 9:50 a.m., 1:00 – 1:50 p.m.
Tuesdays: 9:00 – 9:50 a.m., [12:00 – 12:50 p.m. on-call Math Lab]*
Wednesdays: 9:00 – 9:50 a.m.
Thursdays: 9:00 – 9:50 a.m., [12:00 – 12:50 p.m. on-call Math Lab]*
Fridays: 9:00 – 9:50 a.m.
Other times may be available by appointment.
*During the two Math Lab on-call hours, I will either be in the Math Lab or in my office.

Course Description: A study of finite mathematics emphasizing business, behavioral, and social sciences. Topics include limit of sums and the definite integral, analyzing accumulated change, multivariable change, and differential equations if time permits.

Statement of Prerequisites: A grade of “C” or better in MATH 2350 (Business Calc. I). STAT 2005 can be taken either prior to or concurrently with MATH 2355.

General Objectives: The emphasis of business calculus is more on conceptual understanding rather than the mastery of algebraic skill and technique found in the regular calculus sequence (although there is plenty of that here too). The material here is data-driven and technology based, with a modeling approach. Students will learn the material through a combination of lecture and group work, with extensive use of graphing calculators and/or computers.

Specific Objectives: Students should:
1) Be able to find the accumulation function for a given function and know how it relates to the Fundamental Theorem of Calculus.
2) Be proficient in the use of antiderivative rules.
3) Be able to evaluate definite and improper integrals, by hand and by calculator.
4) Be able to apply definite integrals to business problems.
5) Be able to take partial derivatives, and apply them to multivariable optimization problems.
6) Be able to 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) Be able to 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, or supplemental problems handed out by the instructor. 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. If you do not have your assignment ready on the day it is due or if you are absent on
the day of a pop quiz, 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 one week or more 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 such a case, I can make arrangements with you to make up work if you have missed more than three assignments. If you have missed three or fewer assignments or if you have missed more than three assignments for no valid reason, no make-up work or late assignments will be accepted.

Another reason to report your absence of one week or more to the dean of students is that it will let me know you intend to return. Otherwise you may be dropped from the class by faculty-initiated withdrawal for non-attendance.

In addition to the assignments, there will be four (or five if time permits) 100-point exams. These 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 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.

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.

Please turn off cell phones and pagers during class time!

**Evaluation Criteria:** The total of your exams, assignments, and final exam will be divided by the total possible points. 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).

**Required Text, Readings, Materials:**
- A graphing calculator. I will be using a TI-83+ for demonstrations, but most graphing calculators will suffice as long as you have the instruction manual for it. The TI-81, TI-82 and TI-85 are obsolete and may not have all of the functions you will need. The Math Learning Center has calculators available for semester-long rental – but go early before they’re all gone.

**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.
- The Peer Tutoring Center is located in CE 105, near the Casper College bookstore. Make sure you get help as soon as you start having trouble!
**Last Date to Change to Audit Status or Withdraw with a W Grade:**
Friday, November 4, 2005

**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 in order to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take your problem through the appropriate chain of command starting with the department head, then the division chair, 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.

ADA Accommodations Policy: It is the policy of Casper College to provide appropriate accommodations to any student with a documented disability. If you have a need for accommodation in this course, please make an appointment to see me at your earliest convenience.

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

Introduction to the course
Review of Business Calculus I (3 days)
6.1 Results of Change and Area Approximations
6.2 Limit of Sums, Accumulated Change, and Definite Integral
6.3 Accumulation Functions
6.4 The Fundamental Theorem
6.5 The Definite Integral
6.6 Average Value and Average Rate of Change
**Exam #1** (around the fourth week of the semester)
7.1 Perpetual Accumulation and Improper Integrals
7.2 Streams in Business and Biology
7.3 Integrals in Economics
7.4 Probability Distributions and Density Functions
**Exam #2** (probably the week before fall break)
9.1 Multivariable Functions and Contour Graphs
9.2 Cross-sectional Models and Rates of Change
9.3 Partial Rates of Change
9.4 Compensating for Change
**Exam #3** (around the twelfth week of the semester)
10.1 Multivariable Critical Points
10.2 Multivariable Optimization
10.3 Optimization Under Constraints
10.4 Least-Squares Optimization
If time permits, we will cover chapter 8 (Repetitive Change: Cycles and Trigonometry) or chapter 11 (Dynamics of Change: Differential Equations and Proportionality).
**Exam #4** (the week before finals week)

Final exams are Monday-Thursday, December 18-21. The exact date and time of our final exam will be announced later.
No classes on the following days: September 4 – Labor Day, October 23-24 – Fall Break, November 22-24 – Thanksgiving Break