Casper College Course Syllabus

Course Number And Title: MATH 1000-05 Problem Solving Mathematics

Semester / Year: Fall 2006

Lecture Hours: 3  Lab Hours: 0  Credit Hours: 3

Class Time: 12:00-12:50  Days: M,W,F  Room: PS 111

Instructor: 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 Math Lab on-call hours, I will either be in the Math Lab or in my office.

Course Description: Focuses on the strategies of problem solving. Topics in the course are taken from financial mathematics, logic, probability, statistics, and discrete mathematics.

Prerequisites: A grade of "C" or better in DVST 0920 within the past year, an ACT score of 21 or better within the past year, or the appropriate placement by the COMPASS exam.

General Objectives: The objectives of this course are to provide the student with an introduction to some of the mathematics currently being used everyday in society. It is to introduce the student to a different view of mathematics than that of the traditional algebra – geometry curriculum by presenting topics that are applicable to real-life situations. It is also designed to introduce the student to a variety of ways of solving problems they may encounter in their lifetime and show the relevance of mathematics to everyday life. Hopefully it will also help them also understand the “beauty” of mathematics and help the students to better appreciate and like mathematics.

Specific Objectives: Students should:
1. Be able to apply simple financial formulas to solve problems involving compound interest, annuities, sinking funds, etc.
2. Be able to use simple financial formulas to analyze problems that require financial decisions.
3. Be able to use the empirical, experimental, and subjective definitions of probability to do probability problems involving one event.
4. Be able to apply the laws of probability to analyze problems involving multiple events and expected value.
5. Be able to describe a data set using basic simple statistics and graphics.
6. Be able to construct an interval estimate from the normal distribution and understand it has a specified certainty of being correct.

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 at least three 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.

There will be a project assigned this semester. This will generally involve group work and a written report. Total points possible for the project will be announced later.

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, 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). Your total points earned will be divided by the total possible points to arrive at your percentage. I use the usual 90 - 100% = A, 80 - 89% = B, 70 - 79% = C, 60 - 69% = D, 0 - 59% = F.

**Required Text, Readings, Materials:**
- "Using and Understanding Mathematics - A Quantitative Approach", by Bennett and Briggs, 3rd edition, published by Addison Wesley is the required textbook. There is also an optional student guide available for purchase.
- A scientific or graphing calculator.

**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 3, 2006

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.
2A The Problem Solving Power of Units
2B Standardized Units
2C Problem Solving Guidelines and Hints
4A The Power of Compounding
4B Savings Plans and Investments
4C Loans, Credit Cards, Mortgages
4D Income Taxes
Exam #1
5A Fundamentals of Statistics
5B Should You Believe a Statistical Study?
5C Statistical Tables and Graphs
5D Graphics in the Media
6A Characterizing a Data Distribution
6B Measures of Variation
6C The Normal Distribution
6D Statistical Inference
Exam #2
7A Fundamentals of Probability
7B Combining Probabilities
7C The Law of Large Numbers
7E Counting and Probability
13A Network Analysis (Euler Circuits)
13B The Traveling Salesman Problem (Hamilton Circuits)
Exam #3
1B Propositions and Truth Values
1C Sets and Venn Diagrams
1D Analyzing Arguments
10A Fundamentals of Geometry
10B Problem Solving with Geometry
Final exam week is Monday December 18 – Thursday December 21. The day and time of our final exam will be announced later.

No class on the following days: Sept. 4 Labor Day, October 23-24 Fall Break, November 17 Advising Day, November 22-24 Thanksgiving Break.