COURSE NUMBER AND TITLE: MATH 1000 Problem Solving Mathematics

SEMESTER / YEAR: Fall 2006

LECTURE HOURS: 3, LAB HOURS: 0, CREDIT HOURS: 3

CLASS TIME: 9:00-9:50 a.m. MWF

CLASS ROOM: PS 315

INSTRUCTOR: Debra Swedberg
INSTRUCTOR'S OFFICE #: PS 343
PHONE: (307) 268-2251 (with Voice Mail)
E-MAIL: swedberg@caspercollege.edu
FAX: (307) 268-2041

OFFICE HOURS:
Mondays thru Thursdays: 10:00 – 11:50 a.m. and 1:00 – 1:50 p.m.
Fridays: 10:00 – 11:50 a.m. ** It is possible that those times do not work for your schedule, so we can determine a convenient time to discuss your questions and concerns.

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 again within the past year.

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

GENERAL OBJECTIVES: This course is designed to give you a solid preparation for further math courses. We will investigate various topics in math - Problem Solving Techniques, Logic, Statistics, Probability, Finances, Geometry, and Discreet Math. Students who successfully pass this class with a grade of "C" or better will be prepared to enter MATH 1100, Theory of Arithmetic for Elementary Teachers, or STAT 2005, Elementary Statistics, or STAT 2070, Social Science Statistics.

SPECIFIC OBJECTIVES: Students will learn about problem solving techniques and strategies, and then use them to solve problems involving finance, probability, statistics, voting theory, and logic. If time permits, students will learn the terms used in geometry and how to find areas, perimeters, and volumes of shapes.

METHODOLOGY: This is primarily a lecture course with classroom activities when appropriate. We will collect homework, take quizzes and exams, as scheduled. In the beginning of each class, unless it is an examination day, we will begin with questions and clarifications. From that, we will either finish up a topic or continue with new material.

It may be necessary for you to search the internet for information or research a topic, so it will be assumed that any student in this class has access to the Internet. Having Internet access at home is convenient but not necessary as long as you have access somewhere, such as one of the computer labs at Casper College. Let me know if you need any help.

Students will be assessed on a regular basis by homework, projects, quizzes, and exams. Points may be deducted for not showing work even if the answer is correct, because the process is as important as the answer.

What if you need more help or have questions?!?!?!? Please see a partial list of options for you:
1) MY OFFICE, PS 343 - either in person, by phone (268-2251), e-mail (swedberg@caspercollege.edu).
2) MATH LEARNING CENTER (MATH LAB) LOCATED IN PS 104. Hours will be announced. (Last semester they were from 7 am - 7pm MTuWTh and 7 am - 3pm F)
3) PEER TUTORING - Ms Carmen Springer-Davis in CE 105.
4) The WEB SITE for our textbook at http://www.awlonline.com/bennett-briggs/
ASSESSMENT:
1) HOMEWORK: Problems will be assigned from the textbook - these will be collected. As with any class, it is important to stay caught up and ask questions as they arise.
2) QUIZZES: Quizzes will typically be problems from the homework assignments - a check to see how you are doing, when your book and notebook are closed. It is my hope that it will better prepare you for the exam. They will be announced ahead of time.
3) PROJECTS: The projects are a little more involved than homework assignments. Projects will require you to work with your textbook, your instructor, the Internet, and other outside sources. There may be some research involved, and there will be a graded writing component with each project. Stay tuned. This may be a new assessment to you in the world of math. I have come to believe that it is an important inclusion into our curriculum. It is meant to test how well you can "talk math" - if you can explain something, then you are better apt to understand something deeper and for a longer period of time.
4) EXAMS: See the tentative schedule at the end of this document for the material for each exam and for the timing of each exam.

EVALUATION CRITERIA: An approximate breakdown of your grade in this course is as follows:
- Homework Average - after dropping 10% of your scores, we will calculate your average score and treat that as a 100 point contribution to your final grade.
- Quizzes: the average score will also add 100 points to your final score.
- Projects: probably two of them, worth 50 points each, for another total of 100 points
- Exams: three of them, worth 100 points each
- Final exam: worth 100 points

So if we can stick to this schedule, we will be basing your grade on 700 points by the end of the semester. Your points divided by 700 points will determine your grade with the following distributions: 90-100%= A, 80-89%= B, 70-79%= C, 60-69%= D, 0-59%= F.

REQUIRED TEXT, READINGS, MATERIALS:
1) "Using and Understanding Mathematics - A Quantitative Approach", by Bennett and Briggs, 2nd edition, published by Addison Wesley is the required textbook. There is also an optional student guide available for purchase. You can purchase the textbook by going to the Casper College bookstore in person or by visiting their web site at: http://shop.efollett.com/htmlroot/storehome/caspercollege184.html
2) A scientific calculator. You will not need a graphing calculator, but if you already have one that would be fine. If your calculator only does addition, subtraction, multiplication, and division, you will need to buy or borrow a scientific calculator. A good scientific calculator will probably cost less than $20 at most stores. If the calculator doesn't say "scientific" on it - look for keys that have things like "log", "ln", "sin", etc on them.
3) Access to the Internet.

LAST DATE TO CHANGE TO AUDIT STATUS OR TO WITHDRAW WITH A "W" GRADE: Friday, November 3, 2006
will be the last day to drop this class. No change to an audit, either after this date will be given.

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.

If you have a complaint, problem, suggestion, etc. concerning this course, please consult with me, the instructor, first. If we can't resolve the issue, we will then consult with the chair of the Physical Sciences division.

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 a Casper College counselor or me at your earliest convenience.
TENTATIVE SCHEDULE WITH COURSE CONTENT

AUGUST
28 Introduction & Orientation
30 1A Recognizing Fallacies

SEPTEMBER
1 1B Propositions and Truth Values
4 LABOR DAY – NO CLASSES
6 1C Sets and Venn Diagrams
8 1D Analyzing Arguments
11 2C Problem Solving
13 Time
15 5A Fundamentals of Statistics
18 5B Should You Believe ... Study?
20 5C Statistical Tables and Graphs
22 5D Graphics in the Media
25 Time
27 REVIEW
29 Exam #1

OCTOBER
2 6A Characterizing a Data Distribution
4 Time
6 6B Measures of Variation
9 6C The Normal Distribution
11 6D Statistical Inference
13 Time
16 7A Fundamentals of Probabilities
18 7B Combining Probabilities
20 7C The Law of Averages
23-24 Fall Break - NO CLASSES
25 7E Counting and Probability
27 Review
30 Exam #2

NOVEMBER
1 4A The Power of Compounding
3 4B Savings Plans and Investments**
**November 3rd is the last day to withdraw from this class with a W
6 4C Loan Payments/Credit Cards...
8 4C cont
10 4D Income Taxes
13 12A Network Analysis (Euler Circuits)
15 12B The Traveling Salesman Problem (Hamilton Circuits) ??
17 11A Voting: Does the Majority Always Rule? Advising day??
20 11B Theory of Voting
22-24 – Thanksgiving Holiday - Casper College will be closed – Enjoy!
27 10A Fundamentals of Geometry
29 10D Proportion and the Golden Ratio

DECEMBER
1 Review
4 Exam #3
6 Add'l Topics
8 Add'l Topics
11 Add'l Topics
13 Review for Final
15 Review and Point Totals
Final exam week: December 18-21

Please note that we have some "Time" days and some "Add'l Topics" days but there are no scheduled "Project" days - that is part of why this is stated as "tentative" schedule - rest assured that we will get through the required information and all will be GREAT - even if it doesn't happen on the exact day stated…

<table>
<thead>
<tr>
<th>Week</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Friday</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1</td>
<td>8/28</td>
<td>8/30</td>
<td>9/1</td>
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<td>Intro/Orient</td>
<td>A Recognizing Fallacies</td>
<td>1B Propositions &amp; Truth Values</td>
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<td>2</td>
<td>9/4</td>
<td>9/6</td>
<td>9/8</td>
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<td>Labor Day - No Class</td>
<td>1C Sets and Venn Diagrams</td>
<td>1D Analyzing Arguments</td>
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<td>3</td>
<td>9/11</td>
<td>9/13</td>
<td>9/15</td>
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<td>2C Problem solving guidelines</td>
<td>Time</td>
<td>Fundamentals of Statistics</td>
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<td>4</td>
<td>9/18</td>
<td>9/20</td>
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<td>5B Should You Believe...?</td>
<td>5C Statistical Tables/Graphs</td>
<td>5D Graphics in the Media</td>
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<td>9/25</td>
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<td>Time</td>
<td>Review</td>
<td>Exam #1</td>
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<td>10/2</td>
<td>10/4</td>
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<td>6A Characterizing a Data Distribution</td>
<td>Time</td>
<td>6B Measures of Variation</td>
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<td>10/9</td>
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<td>6C The Normal Distribution</td>
<td>6D Statistical Inference</td>
<td>Time</td>
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<td>10/16</td>
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<td>7A Fundamentals of Probabilities</td>
<td>7B Combining Probabilities</td>
<td>7C The Law of Averages</td>
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<td>10/23</td>
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<td><strong>FALL BREAK - NO CLASS</strong></td>
<td>7E Counting and Probability</td>
<td>Review</td>
<td><strong>Fall Break is 10/23-10/24</strong></td>
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<td>10</td>
<td>10/30</td>
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<td>11/3**</td>
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<td>Exam #2</td>
<td>4A The Power of Compounding</td>
<td>4B Savings</td>
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<td>4C Loan Payments /Credit Cards ...</td>
<td>4C cont</td>
<td>4D Income Taxes</td>
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<td>11/13</td>
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<td>12A Network Analysis (Euler Circuits)</td>
<td>12B The Traveling Salesman Problem (Hamilton Circuits)</td>
<td>11A Voting: Does Majority Always Rule?</td>
<td><strong>11/17 is Advising Day - Tentatively</strong></td>
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<td>11/20</td>
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<td>11B Theory of Voting</td>
<td>Thanksgiving</td>
<td>Holiday</td>
<td>Classes are cancelled for the Thanksgiving Holiday</td>
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<td>14</td>
<td>11/27</td>
<td>11/29</td>
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<td>10A Fundamentals of Geometry</td>
<td>10D Proportion and the Golden Ratio</td>
<td>Review</td>
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<td>Exam #3</td>
<td>Add'l Topics</td>
<td>Add'l Topics</td>
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<td>12/11</td>
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<td>Add'l Topics</td>
<td>Add'l Topics</td>
<td>Review for Final Get Point Totals</td>
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<td>17</td>
<td>12/18</td>
<td>12/20</td>
<td>12/22</td>
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<td></td>
<td>Finals begin</td>
<td>see schedule</td>
<td>Go HOME! ☺</td>
<td><strong>Finals Week is 12/18-12/21</strong></td>
</tr>
</tbody>
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