

MONTGOMERY COUNTY COMMUNITY COLLEGE
MAT 106 - Mathematical Applications – 3 credits
Spring 2005

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If I am not in my office at the time of your call, please leave a message. We now have Voice Mail.

Course Description: This course is designed for liberal arts, social science, humanities, secondary education, and communications majors. It stresses mathematical applications from linear programming, probability and statistics, and at least one of the following topics: matrix algebra, game theory, graph theory, mathematics of finance, and the computer with applications. A calculator is required for this course; see instructor. This course does not satisfy the MAT 100 prerequisite requirement for MAT 125, MAT 131, MAT 140 or MAT 161.

Prerequisites: Math placement test recommendation “UND116” (under MAT 116) or “ABV 100” (above MAT 100) or MAT 011 with a minimum grade of “C.”

Learning Objectives: Upon completing this course, students should have the following knowledge and skills.

1. Be able to graph straight lines and systems of equations.
2. Be able to graph linear inequalities.
3. Be able to do linear programming.
4. Be able to do permutations and combinations.
5. Be able to solve probability problems dealing with probability experiments, sample spaces and expected values.
6. Be able to work with frequency distributions and their graphs.
7. Be able to find measures of central tendency and measures of dispersion.
8. Be able to work with the normal curves.
9. Be able to solve consumer math problems involving ratios, proportions, interest both simple and compound, installment buying and mortgages.

Learning Activities: The learning goals will be achieved through lectures, demonstrations, small group discussions, and the use of technology.

Office Hours: Office hours are posted on the door. All others by appointment.
Monday - Thursday -
Tuesday - Friday -
Wednesday -

Attendance Policy: A student is expected to attend all classes.

If a student misses more than two weeks worth of classes, his/her grade will be lowered by one letter grade each additional week.

If you are absent, please let me know so that I can give you the assignment. It is the responsibility of the student to make up any missed work, including material covered in class. If a student is having difficulty he/she can come to my office and ask questions.

Lateness Policy: A lateness is treated the same way as an absence.

Assignment/Test Make-Up Policy: **No make-ups on quizzes or tests.** If a student misses a test, the grade he/she receives on the final will be substituted. This will only be done once. If one has been there for all four tests, the final will replace the lowest test grade.

Late Assignment Policy: Assignments will be deducted one letter grade per class missed.

Class Participation: Students are encouraged to participate in class.

Withdrawal Policy: If a student wishes to withdraw from the course, the student must complete a formal withdrawal form. This form must be signed by me. Any student who fails to officially withdraw from a course will receive a grade of "F."

Cheating and Plagiarism Policy: See Student Handbook

Academic Discipline: See page 21 of the College Catalogue

Grade Changes and Challenges: See page 19 of the College Catalogue

Methods of Evaluation: There will be four (4) major tests as indicated in the syllabus. There will be quizzes and homework assignments that will be turned in and graded. I will drop the lowest two grades. There will be a final exam scheduled at the end of the semester during finals week.

Criteria for Evaluation: Tests will be worth 100 pts. each, quizzes and homework will be worth 10 pts. each, and the final will be worth 100 pts. of your final grade.

Letter Grades: A = 90 – 100 D = 60 - 69
 B = 80 - 89 F = Below 60
 C = 70 - 79

Final Exam
Schedule: To be announced

Graphics Calculators: Graphics calculators will be provided on loan to the student, but a scientific calculator is required.

Class Cancellation
Policy: For instructor illness - phone chain

 For inclement weather (listen to radio, KYW) - 320 (day), 2320 (evening)
 or www.mc3.edu web page.

Available Support
Systems: Learning Assistance Lab (LAL), Library, A-V services, Computer labs

Class
Expectations: Arrive on time; homework completed; no sharpening pencils during class
 time; no cell phones or pagers turned on; no PDA's used during class
 (Palm Pilots). See Code of Conduct in Student Handbook.

Students with
Disabilities: Students with disabilities may be eligible for accommodations in this
 course. Please contact the Director of Services for Students with
 Disabilities in the Counseling Center, College Hall, at 215-641-6576 or
 6577 for more information.

SEQUENCE OF TOPICS

	<u>Text Sections</u>	<u>Topics</u>
Week 1	6.1, 6.2, 6.3	Order of Operations, Solving Equations, Proportions and Formulas
Week 2	6.4, 6.6, 6.7, 6.8	Word Problems, Graphing Straight Lines (Plotting Points and Using Intercepts - Not Slope) Graphing Linear Inequalities
Week 3	7.1, 7.2, 7.5, 7.6	Solving Systems of Equations, Systems of Inequalities, Linear Programming
Week 4	7.6	Review and Test #1 – Ch.. 6, 7
Week 5	11.1, 11.2, 11.3	Percent, Promissory Notes and Simple Interest, Compound Interest
Week 6	11.4, 11.5	Installment Buying, Mortgages
Week 7	11.5	Review and Test #2 – Ch. 11
Week 8	12.1, 12.2, 12.3	Empirical and Theoretical Probability, Odds
Week 9	12.4, 12.5, 12.6	Expectation, Tree Diagrams, “Or” and “And” Problems
Week 10	12.8, 12.9	The Counting Principle and Permutations, Combinations
Week 11	12.9	Review and Test # - Ch. 12
Week 12	13.1, 13.2, 13.3	Sampling Techniques, Misuses of Statistics, Frequency Distributions
Week 13	13.4, 13.5, 13.6, 13.7	Statistical Graphs, Measures of Central Tendency, Measures of Dispersions, The Normal Curve
Week 14	13.7	Review and Test #4 – Ch. 13

MAT 106 – Mathematical Applications - Assignment Sheet – Fall 2004

Marion Graziano

Textbook: *A Survey of Mathematics with Applications*, 7th ed., Angel, Abbott, and Runde, Pearson Custom Publishing, 2005.

Section	Problems
6.1	11, 15, 19, 25, 31, 35, 37, 39, 41
6.2	15-33 odd, 39, 43, 49, 51, 57, 63, 70
6.3	9, 13, 17, 23, 39-47
6.4	17, 21, 23, 31, 33, 37
6.6	7-23 odd, 29, 37, 43, 45, 51
6.7	57-65 odd
7.1	17-29 odd
7.2	7, 11, 15, 19, 25, 29, 35, 39
6.8	3-23 odd
7.5	3-17 odd
7.6	9, 11, 15, 17
Test 1	Chapters. 6, 7 Linear Programming
11.1	9, 11, 17, 21, 25, 33, 35, 41, 43, 47, 49, 53, 57, 59, 63, 66
11.2	9, 11, 15, 17, 21, 23, 27, 29, 33, 37, 39, 41, 43, 45, 47, 51
11.3	7, 9, 11, 15, 21, 23, 27, 33, 37
11.4	9, 13, 15, 17, 19, 29, 35
11.5	11, 15, 17, 21
Test 2	Chapter 11, Consumer Mathematics
12.1	11, 15, 17, 19, 23, 25
12.2	8, 17-25 odd, 39-41 odd, 47-52 all, 67-71 odd
12.3	7, 11-19 odd, 31, 35, 37
12.4	9, 15, 19, 25, 27
12.5	11, 15, 17, 23
12.6	17-37 odd, 53, 55-58 all
12.8	9, 15, 17, 19, 21, 23, 33, 35, 47, 51
12.9	7, 13, 23, 25, 27, 29, 31
Test 3	Chapter 12 – Probability
13.1	7, 15, 21
13.2	7, 9, 13, 17
13.3	7, 9, 11, 15
13.4	5, 13, 15, 17
13.5	11, 15, 19, 21, 23, 31
13.6	15, 17, 19, 21, 25
13.7	39-47 odd, 55-60 all
Test 4	Chapter 13 – Statistics
Final Exam	There will be a comprehensive final exam given during final exam week.