



The University of
Montana

Department of Mathematical Sciences
Fall 2009, Math 105 Section 7
Contemporary Mathematics

Instructor: Dr. Jenny McNulty **E-mail:** jenny.mculty@umontana.edu
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Office Hours: Mon 2-3, Tues 3-4, Wed 10-11 and by appointment MTWF.
Class Web Page: <http://www.math.umt.edu/105>

Text: *For All Practical Purposes*, Seventh Edition, COMAP, W. H. Freeman, 2005

Catalog Course Description: U 105 Contemporary Mathematics 3 cr. Offered every term. Prereq., MATH 09D or appropriate placement score (level 3 or above). An introduction to mathematical ideas and their impact on society. Intended for students wishing to satisfy the general education mathematics requirement.

Learning Goals:

1. To attain some degree of mathematical literacy, including an ability to read mathematical material and write using mathematical notation correctly. To develop skills to think and reason mathematically in order to function more effectively in the modern world.
2. To examine ways in which mathematics is used, to follow and understand logical arguments, and to solve applied quantitative problems. This includes learning to formulate a problem precisely, to interpret solutions, and to make critical judgments in the face of competing formulations and solutions.
3. To understand elementary probability concepts and phenomena: including sample spaces with equally likely outcomes, the basic parameters (mean, standard deviation), the normal distribution, and a qualitative view of the Central Limit Theorem.
4. To understand elementary statistical concepts, such as data description, statistical estimation, randomization, and statistical inference.
5. To explore and examine several other aspects of contemporary mathematics. This could include, but is not limited to, management science (e.g. graph models for network problems), social choice and decision making (e.g. elections, voting, fair division, Congress apportionment), or applied geometry (e.g. symmetry, tilings, growth rates).

Ethics Code: All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at: http://life.umt.edu/vpsa/student_conduct.php/

Special Accommodations: Students with disabilities are welcome to discuss accommodations with me.

Important Dates:

Labor Day - no classes	Sept. 7
Last day to Add/ Drop via Cyberbear	Sept. 21
Last day to Add/ Drop via Paper	Nov. 2
Veterans' Day - no classes	Nov. 11
Thanksgiving Break - no classes	Nov. 25-27
Last day to Withdraw from all courses	Dec. 4
Last day to Petition to drop or change options	Dec. 11

Exam Dates:

Exam 1 Patterns & Tilings	Monday, Sept. 28
Exam 2 Management Science	Wednesday, Oct. 21
Exam 3 Statistics	Monday, Nov. 16
Exam 4 Finance	Tuesday, Dec. 15

Grading: (on the plus/minus scale)

Class Work (IC problems, quizzes)	1/6 of course grade
Assignments (HI problems, projects)	1/6 of course grade
Exams (4)	2/3 of course grade

Material: Patterns & Tilings (Ch 19, 20); Management Science (Ch 1, 2, 3); Statistics (Ch 5,6,7,8); Finance (Ch 21,22,23)

Resources: Math@Mansfield: <http://www.umt.edu/math/MLC/>, STS, TRIO, DSS

Details

Homework: The list of assigned problems is only a minimal list. I recommend doing additional problems whenever possible – the more straight forward problems can be used as a warmup while additional problems, in areas that you find challenging or interesting, can be used to individualize your math workout! *Keep in mind that the only way to learn mathematics is to do mathematics.* This does not mean that you should mechanically solve all the problems in sight, but instead you should be prepared to spend some quality time thinking about mathematics. You are encouraged to work together on assignments, but must write up the solutions individually; please give credit to co-authors. Your solutions are expected to be clearly written, with thorough explanations; I am not a mind reader. It often helps if you look over your solutions before you hand them in and ask if one of your classmates could easily understand what you have written.

Homework Assignments: The assigned problems are of two types, *in-class* and *hand-in*. The *hand-in* problems are due at the beginning of each class. A subset of the problems will be graded. Please have your assignments stapled or paper-clipped. You will be asked to present the *in-class* problems (in-class). The in-class problems will be graded according to the following scheme: you will earn +1 for each problem you that report to have done correctly, but if you present an incorrect solution, you will get -5 added to your total. Late homework will *not* be accepted, early homework will!

Projects: Projects will involve outside research on any (approved) topic related to the material studied in the course. The projects can be any creative work; a paper, a work of art, an experiment etc. Details to follow.

Readings/Quizzes: *Reading the text is essential for this course.* The class schedule lists what material will be covered each day; please come prepared for class by reading the appropriate section(s) in the text. A short quiz, based on the readings, will be given each day. When you read the text the first time, read it as you would the newspaper - just get the general idea of what is happening. After the material is covered in class, you can re-read the text (with a pencil and paper at the ready) for the details. If you are prepared for class, we will make better use of class time and can focus on the finer points!

Class Attendance and Activities: Attendance is essential for success in this course. While attendance will not be taken each day, there will be assignments due each day that will contribute to the “class grade”. Class activities may include: discussions, group projects, videos, and worksheets. Class participation is necessary; learning mathematics is similar to learning a new sport, it requires participation and practice.

Class Work Grade: The class grade is comprised of quiz grades, in-class homework, in-class activity grades, and class participation for each day. You will receive one class grade for each class.

Assignment Grade: The assignment grade is based on hand-in homework assignment grades and projects.

Exams: There will be four 50 minute exams, these will contribute equally to the Exam Grade.

Makeups: Makeups for an exam will not be given unless you have a valid excuse and you contact me prior to the exam. Since one of your lowest assignment scores and one of your class grades will be dropped, there will be no makeups for any quiz, homework, or class activity.

Watch: Please watch for newspaper and magazine articles etc that pertain to the course and bring them in.