SYLLABUS
Applied Modern Algebra, MATH 375.002
FALL 2005

INSTRUCTOR: Dr. Krzysztof Chris Ciesielski

OFFICE HOURS: T&Th 8:00-8:30am, 11:30-noon, 6:30-7:00pm, (subject to change)

OFFICE: 308G Armstrong Hall

CLASS MEETING TIMES: T, Th 8:30–9:45pm

CLASS MEETING PLACE: 315 Armstrong Hall

OFFICE PHONE NUMBER: 293-2011 ext 2337

WEB PAGE: www.math.wvu.edu/~kcies

TEXT: Ralph P. Grimaldi, **Discrete and Combinatorial Mathematics**, An Applied Introduction, Fifth Edition, PEARSON Addison Wesley, ISBN 0-201-72634-3

GRADING SCHEME:

Quizzes	10%	
Two regular tests	50%	(25% each)
Comprehensive final	40%	

ATTENDANCE POLICY: Attendance will be checked daily. Each **three** absences not excused according to the University Policy will result in **dropping your final grade** by one letter grade (that is, a grade point).

MAKE-UPS Make-up tests will be given only under very exceptional circumstances (University approved excuse is necessary) and must be arranged before the scheduled test. WARNING: out of fairness to the students who take the test the scheduled time, a makeup test will be **harder** than the regular test, to reflect the extra time to prepare.

QUIZZES: There will be 5-10 minutes quizzes, usually once a week. There will be **no make-up quizzes**.

STUDENT EFFORT:

Taking good notes helps you to be an attentive and active participant and your notes can serve as a good study guide. Students absent from classes for any reason are responsible for the material presented.

Read the textbook. This will provide further explanation and additional examples.

Work the assigned problems. To do well on the tests it is essential to work all the assigned (end of the sections) problems.

Consult the instructor and/or other students in the class whenever you have difficulty understanding a part of the material. If you cannot come during the office hours, do not hesitate to schedule an appointment. Feel free to interrupt the instructor and ask any questions during the class.

GRADING SCALE:

A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	below 60%

West Virginia University is committed to social justice. I concur with that commitment and expect to maintain a positive learning environment based upon communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to farther such a positive and open environment in this class will be appreciated and given serious consideration.

MATH 375.002 (Applied Modern Algebra) Fall 2005

Catalog Description: Finite fields, algebraic coding theory, Boolean algebras, monoids, finite state, and Turing machines.

The course will cover the topics listed in the Catalog Description except for Turing machines. Moreover, for completeness, some introductory topics will be included.

Here is a **provisional** schedule:

Class	Date	Topic	Sections
1	08/23/05	Counting, Permutations	1.1 1.2
2	08/25/05	Combinations	1.3
3	08/30/05	Sets, Operations on Sets	3.1 3.2
4	09/01/05	Venn Diagrams, Probability	3.3 3.4
5	09/06/05	Division Algorithm	4.1 4.3
6	09/08/05	Euclidean Algorithm	4.4 4.5
7	09/13/05	Relations and Functions	5.1 5.2
8	09/15/05	Formal Languages, Monoids	6.1 6.2
9	09/20/05	Finite State Machines	6.3
10	09/22/05	Review	
11	09/27/05	Review	
12	09/29/05	**TEST 1**	
13	10/04/05	Test Discussion	
14	10/06/05	Rings, Integers Modulo n	14.1 14.2 14.3
15	10/11/05	Switching Functions, Boolean Algebra	15.1 15.2
16	10/13/05	*content to be decided later*	
17	10/18/05	Introduction to Coding Theory	16.5 16.6
18	10/20/05	Hamming Codes	16.7 16.8 16.9
19	10/25/05	Polynomial Rings	17.1
20	10/27/05	Finite Fields	17.2
21	11/03/05	Example of a BCH Code	Handout
22	11/08/05	Error Correction (BCH Example)	Handout
23	11/10/05	General BCH Codes	Handout
24	11/15/05	Review	
25	11/17/05	Review	
26	11/29/05	**TEST 2**	
27	12/01/05	Test Discussion	
28	12/06/05	Review	
29	12/08/05	Review	

Final Exam: Wednesday, December 14, 3:00 pm – 5:00 pm, 315 Armstrong Hall.