



# Ma 125 – Discrete Mathematics II

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## 1. Schedule

0830 – 0930, MWF, SEC A–303

## 2. Prerequisite

Passing grade of **Ma 124**

## 3. Textbooks and References

1. *Discrete and Combinatorial Mathematics: An Applied Introduction, 5th edition*  
 by R. P. Grimaldi. Pearson Education, Inc., 2004.

## 4. Course Outline and Time Frame

### 1. Probability 9 hours

A First Word on Probability  
 The Axioms of Probability  
 Conditional Probability  
 Discrete Random Variables

**Long Test 1, Tentative: Friday, December 4 100 pts**

### (a) RINGS 10 hours

The Ring Structure  
 Ring Properties and Substructures  
 Ring Homomorphisms and Isomorphisms

**Long Test 2, Tentative: Tuesday, January 12 100 pts**

### 2. Groups 10 hours

Definition and Elementary Properties of Groups  
 Homomorphisms, Isomorphisms, and Cyclic Groups  
 Cosets and Lagrange's Theorem

**Long Test 3, Tentative: Tuesday, February 9 100 pts**

### (a) Coding Theory 11 hours

Elements of Coding Theory  
 The Hamming Metric  
 The Parity-Check and Generator Matrices  
 Group Codes: Decoding with Coset Leaders  
 Hamming Matrices

**Long Test 4, Tentative: Friday, March 12 100 pts**

Final Exam (Comprehensive) **200 pts**

## 5. Course Requirements and Grading System

The final mark of the students will be based primarily on the following:

- 4 Long Tests; cancel the lowest score (300 points)

- Final Exam (200 points)
- Optional: Quizzes, Assignments (100 points max)

Total Possible Score: at most 600 points

$$\text{Final Grade} = \frac{\text{Student's Total Score}}{\text{Total Possible Score}} \times 100\%$$

Percentage of the total Score	Equivalent letter grade
92% – 100%	<b>A</b>
86% – 91%	<b>B+</b>
77% – 85%	<b>B</b>
69% – 76%	<b>C+</b>
60% – 68%	<b>C</b>
50% – 59%	<b>D</b>
49% and below	<b>F</b>

## 6. Class Policies

1. Cellular phones shall be turned off during class hours.
2. Maximum number of absences is 9 hours.
3. The teacher may send anyone out of the classroom due to discourtesy to the teacher or to a fellow student, misbehavior in the classroom, and other reasons found in the Student Handbook.
4. A student who misses an exam may be given a make-up exam depending on the student's reason(s), and upon the Department Chairperson's approval. Make-up exams are more difficult than the regular exam.
5. Any form of cheating is not allowed. Refer to the Student Handbook for details.
6. Use bond paper in all tests. Do not use pencil in all tests. No borrowing and/or lending of calculators.
7. A student with a prefinal class standing of 90% maybe exempted from taking the final exam.

## 7. Additional Important Dates to Remember

Date	Day	Event
11/13/09	Friday	<b>2nd Sem Faculty Day</b>
11/30/09	Monday	Bonifacio
12/08/09	Tuesday	Feast of the Immaculate Conception
<b>12/20/09 – 01/03/2010</b>		Christmas Break
02/01/10	Monday	ADMU President's Day
02/22/10	Monday	People Power Day

## 8. Consultation Hours

Mon-Tue-Wed-Thu 1330-1430