

FLORIDA INTERNATIONAL UNIVERSITY

Department of Mathematics

Syllabus ** MAD 1100 ** Spring 2012

Course Title: Mathematics for Information Technology **Course Number:** MAD 1100

Credit Hours: 3 credits **Textbook:** A First Course in Discrete Mathematics

Authors: John C. Molluzzo and Fred Buckley. **Publisher:** Waveland Press, Inc. 1986.

Meeting Time and Place: MWF 10:00 – 10:50a.m. in AHC 3—205.

Course Description

Objective: To provide the student with a core of mathematical terminology and concepts used in the information technology field.

Topics to be Covered.

- I) Sets and Logic
 - a) Set Builder Notation. Finite and Infinite Sets. Set Equality. Subsets.
 - b) Power Sets. Universal Set. Operations. DeMorgan's Laws.
 - c) Connectives. Truth Tables. Tautologies. Logical Implication.
- II) Combinatorics
 - a) Permutations.
 - b) Combinations.
- III) Probability
 - a) Finite Probability Spaces. Events. Addition Law.
 - b) Conditional Probability. Independent Events. The Multiplication Law.
 - c) Compound Experiments and Repeated Trials. Binomial Experiments. Tree Diagrams.
 - d) Random Variables and Expected Values.
- IV) Statistics
 - a) Mean, median, mode.
- V) Relations and Functions
 - a) Relations. Functions. Graphs of Functions.
 - b) Three classes of functions. Functions. Operations on Functions.
- VI) Boolean Algebra
 - a) Boolean Expressions. Principle of Duality.
 - b) Complete Sum-of-Products and Product-of-Sums Forms.
 - c) Karnaugh Maps. Prime Implicants of Boolean Expressions.
 - d) Minimal-Sum and Minimal-Product Forms.
- VII) Graph Theory
 - a) Graphs and Digraphs. Basic Definitions. Classes of Graphs.

Grading Policy: There will be three one-hour exams plus a cumulative Final Exam. These exams will be averaged, each having equal weight, and a letter grade will be assigned according to the following table: 90 or above, some type of A; 80 – 89, some type of B; 70 – 79, some type of C; 60 – 69, some type of D; 0 – 59, an F.

Make-up Policy. There will be no make-up exams. Should you miss one of the three one-hour exams, your grade on the final *may* substitute for that missed exam. Your grade on the final exam may only substitute for one exam and missing a second exam means you get a zero on that second (missed) exam. Your final may also substitute for your lowest grade if you don't miss any exams. **Corollary:** Your grade on the final exam may be worth 25% or 50% of your final average.

Attendance:

On test days, attendance is required. There are NO MAKEUP TESTS. If you miss a test and, in the opinion of the instructor, the absence is excusable, your final exam will count as two grades. If the absence is not excusable, you will receive a zero on the test missed. Be prepared to document your excuse with a traffic ticket, hospital bill, arrest form, etc. A doctor's note is not acceptable unless it says "(student's name) was unable to attend school on (date of test)." Tardiness is permitted on test days without penalty although you will have less time on the test than everyone else. **If you are so late that someone has already turned in their test before you arrive, you will not be allowed to take the test.**

All tests must be written using pencil. A calculator with a square root button is required. Graphing calculators are prohibited on tests.

Beepers and Cell Phones:

Beepers and cell phones must be **turned off** during tests. The vibrate mode is not considered **turned off**. Beepers and cellular phones must not be visible to you or me. If they are on your belt, they are visible. If they are in your book bag or pocket, they are not. Violations of this policy will result in you having to put the beeper or cell phone in the hallway immediately outside the class. If you are afraid it will be stolen, you may choose to leave with it, but you will not be readmitted to the test and all unanswered test questions will be marked wrong.

Drops and Tuition:

DROPS are not initiated by Prof. Taylor. If you stop attending, you must drop this class yourself to avoid a grade of F. The deadline for dropping classes with a grade of DR is March 19.

EXTRA TUITION CHARGES FOR REPEATED COURSES AND EXCESS HOURS: The Florida Legislature has mandated a tuition surcharge for the third time a student either takes or attempts a college credit course. This charge should serve as additional motivation for you not to have to retake this course. In other words, **DO THE HOMEWORK!!!**

Academic Misconduct:

ACADEMIC MISCONDUCT includes (but is not limited to) giving or receiving assistance on a test, quiz, or homework assignment for which such assistance is not permitted, falsifying a document to obtain an excusal from a test, and using unauthorized notes on a test or quiz. A more complete definition of Academic Misconduct is given [here](#). Penalties for Academic Misconduct range from an F in the course to expulsion from the university.

Classroom Rules: 1) No beepers, cell phones, fax machines, or any other PD's (procrastination devices). 2) No smoking/eating/drinking.

Instructor: Dr. Cleveland Taylor

Office Hours: M 8:00 – 8:50a.m.

Email: ctaylor1@mdc.edu and taylorc@fiu.edu

Schedule of Sections Covered

WEEK:	Sections:	Suggested Exercises:
01/09--13/12	【2.1-2.3	2.1: 1—5. 2.2: 1—7. 2.3: 1—4.
01/16—16/12	Holiday!!!	
01/16—20/12	2.4—2.6	2.4:1—8, 10—12. 2.5: 1—5. 2.6: 1—3.
01/23—27/12	2.7—2.8】	2.7: 1—10. 2.8: 1—6.
01/27—27/12	Exam I	
01/30—03/12	【3.2—3.3	3.2: 1—15. 3.3: 1—15.
02/06—10/12	4.1—4.2	4.1: 1—10. 4.2: 1—7.
02/13—17/12	4.3, BT	4.3: 1—9.
02/20—24/12	4.4, **]	4.4: 1—10.
02/27—27/12	Exam II	
02/27—02/12	【5.1—5.2	5.1: 1—6. 5.2: 1—11.
03/05—09/12	Spring Break!!!	
03/12—16/12	5.3—5.4	5.3: 1—11. 5.4: 1—7.
03/19—23/12	5.5	5.5: 1—12.
03/26—30/12	7.1—7.2	7.1: 1—7. 7.2: 1—3.
04/02—06/12	7.3—7.4】	7.3: 1—4. 7.4: 1—4.
04/09—13/12	8.1—8.2	8.1: 1—8. 8.2: 1—7. 8.3: 1—14.
04/16—20/12	8.3*	8.3: 1—14.
04/20—20/12	Exam III	
04/23—23/12	Final Exam	[9:45a.m.—11:45a.m. According to FIU's

Schedule **only.**]