

Syllabus Math 143-WL1 Fall 2009

College Mathematics II

Instructor: Vinay Duggal

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Room: El Centro ELC 123

Office Hours: 5:30-6:00 PM

Prerequisite: Math 092

Course Description: The purpose of this course is to introduce the students to the structure of Mathematics, which include: mathematics reasoning; mathematical communication and connection with other branches and other disciplines; and problem solving. Topics include: elementary logic, number theory, combinatorial, sets, geometry, probability and statistics, mathematics of finance.

Performance outcomes/Goals

Upon successful completion of the course the student will be able to perform the following:

1. Mathematical reasoning
 - (a) Be able to make up examples that illustrate mathematical definitions and theorem discussed.
 - (b) Be able to make up counterexamples that disprove given mathematical statements or theorems.
2. Mathematical communication
 - (a) Be able to participate in verbal or written class presentations (individualized or grouped).
 - (b) Be able to determine when proofs/examples/counterexamples are needed.
3. Mathematical problem solving
 - (a) Be able to use some technology as a tool to facilitate mathematical learning and teaching
 - (b) Be able to participate in understanding of some history and the development of numbers and the number systems.
 - (c) Be able to participate in solving hypothetical posed problems assigned.
 - (d) Be able to classify and demonstrate understanding of properties plane and solid geometry figures.
 - (e) Be able to do computations in problem situation involving mathematics of finance, statistics and probability.

Required Materials

- ❖ Text: Mathematical Ideas, Tenth Edition by Miller, Heeren and Hornsby; Addison Wesley (Required)

COURSE OUTLINE

5	Introduction to number theory
4	Arithmetic in number systems(bases) Modular Arithmetic
6	Real number representation and applications of decimal and percents
2	Introduction to concepts of set theory
11	Introduction to combinatorics
3	Introduction to Logic
1	Strategies for Problem solving, estimating, and reading graphs
9	Introductory Geometry Plane and solid Geometric Measurements
12	Introduction to Probability
14	Introduction to Mathematics of finance (if time permits)

Assignments: Students are expected to do all the suggested problems and are encouraged to ask questions in class or during office hours on those problems with which they have difficulties. These assignments form the primary guide from which all examinations will be constructed.

Quizzes: There will be a quiz every class day. Quizzes are extra credit. **No make up quizzes will be given.**

Attendance: I do take attendance every day. Each day is worth 2 points and max points you can earn are 32 points.

Exams There will be 3 exams during the semester. Make up Exam has to be taken by next Friday. Final Exam(Third Exam) is a comprehensive exam and that exam you have to pass-to-pass the class.

Free tutoring is available in the math lab 4th of the library

Home Work: I will collect unit homework on the day of the exam. Each unit is equal to 10 points. There are three exams so I will collect homework three times during the semester.

Maximum points for homework-----30 points.

Quizzes: There will be a quiz every class day. Any points earned will be extra credits. **No make up quizzes will be given.**

Attendance: I do take attendance every day. Each day is worth 2 points and max points you can earn are 32 points.

Grading Scale:

90-100 %	A
80-89%	B
70-79%	C
60-69%	D
0-59%	F

No Incomplete will be given in any circumstances.

Cheating: Cheating of any kind is a sure way to get F.

Home Work Assignments

Syllabus Math 143 – WL1(El- Centro) Friday 6:10-8:50p ELC 123--- 3 Credits hours

Text: Mathematical Ideas, tenth Edition, by Miller, Heeren & Hornsby; Addison Wesley

Final Exam: Cumulative Final Exam

Syllabus MATH 143- _____ : College Mathematics II for Elem. and Mid. school teachers

Instructor: _____ Vinay Duggal _____ E-Mail : _____ vk-duggal@neiu.edu _____

Text: Mathematical Ideas, eleventh Edition, by Miller, Heeren & Hornsby; Addison Wesley (REQUIRED) & Calculator

FINAL EXAMINATION :Cumulative Final Exam

Week of	Assignments & Schedule of Examinations
Week One	5.1: Prime & Comp. numbers:9,11,13,15,17,18,19,20,21, 27,34,36,37,38,39,41,43,45,51,53,55,57,58,62,71,72 5.2: other topics on number theory: 2,5,11,12,13,17,18,19,20,21,24,27,28,31,36
Week Two	5.3: GCF & LCM:1 - 5, 8,9,11,15,16,17,21,22,26,27,31,35,36,43,49,50 4.2: Arithmetic in the Hindu-arabic syst: 1- 39 odd
Week Three	4.3:Converting between number bases: 1- 55 odd 4.4:Clock arith. & modular syst.: 1 - 17 odd, 18 - 20, 28,29,30,31,32,33,34,44,45,46,50
Week Four	6.3:Rational & dec. Nos : 1,3,5,7,9,11,13,14,16,19 39,40,41,42,43,44,45,46,47,48,63,65,67,71,73,74,75,79,81,84,85,90,91,99 6.5: Applications of Decimals and percents:1,3,7,11,13,17,19,21,22,25,39, 41,43,47,49,51,55,57,63,64,65,67,70,71,74,75
Week Five	Problem Solving ONE HOUR EXAM I on sections completed Date <u>9 / 25</u>
Week six	2.1: Concept of sets: 1-8,9,11,19,25,27,33,35,39,41,45,49,59-77odd,83,84 2.2:Venn diagram: 1 - 49 odd 2.3: set operations: 7 - 25 odd,47,51,52,53,54,55,57,59,81,83,85,87,95
Week seven	2.4: Cardinal numbers and applications: 9-15 odd,24,26,27,28 11.1 counting by systematic listing:1,3,5,7,8,9-19 odd,25-29 odd,37, 39,41 11.2: Fundamental counting principle:7-21 odd,28,29,30,36,44,45,47,48,51,53
Week Eight	11.3: Permutations and combinations:15,16,17,18,19,20, 21,24,25,26,27,28,37,43,46,48 3.1: Statements: 1,5,7,11,14,17,21,22,24,26,28,41,43,47,57 - 64 3.2:Truth Tables:1,2,5,13,15-21, 25 - 39 odd, 45 - 53 odd, 61 - 67 odd
Week Nine	3.3:The conditional :2,5,6,7,9,11,13,15,21,23,25,27,29,31,33,35 41,43,45,47,49,51,55,57,59,67,69,70,72 3.4:More on Conditional:1 - 15 odd, 19 - 25, 45 - 50
Week Ten	3.6:Arguments and truth tables:1 - 7 odd, 13 - 21 odd ONE HOUR EXAM II on sections completed after exam I Date <u>10 / 31</u>
Week eleven	1.2: An application of Inductive reasoning : Number patterns: Home work problems TBA 1.3: Strategies for Problem solving: Home work problems TBA 1.4: Calculating, estimating, and reading graphs: Home work problems TBA
Week twelve	9.1: Points, lines, planes, and angles: 1 - 33 odd,41,42,47,49,53,57,58,59,63,67,68,75 9.2 Triangles and properties: 13,14,15,17,18,19,21,22,23,24,25,27-37 odd,43,45,47,42,48,49,51 9.3: perimeter and area of plane figures:7,8,11,12,14,15,17,18,20,21,41 - 47 odd, 50,51,52
Week Thirteen	9.4: Geometry of triangles: 3,5,13,15,17,21,23,29,32,41,42,83,85,86 9.5 Volume of solids: 1 - 23 odd,45,46,47,48
Week Fourteen	12.1: Introduction to Probability and the concept of odds: 1- 13 odd,14,15, 19- 35 odd, 42 - 44, 50,51 12.2: Probability of Compound events: 1- 21 odd, 35,36,37
Week fifteen	Catch up or Chapter 14: sections and Home work problems TBA (AS TIME PERMITS) ONE HOUR EXAM III on sections completed after exam II Date _____
Week sixteen	Cumulative final Exam