LONG ISLAND UNIVERSITY * DEPARTMENT OF MATHEMATICS

Syllabus for Math 11Z - Fundamentals of Modern Math

Textbook: Contemporary Mathematics - 4th Edition
Meserve, Sobel, Dossey
Prentice Hall, 1987

Course Objectives: - To serve the needs of both liberal arts students and prospective teachers of elementary mathematics in grades K to 8 with an emphasis on the basic mathematical skills that such a teacher needs to know so as to teach effectively using contemporary elementary math school textbooks

Topic Areas:

1) Numeration and Whole Numbers	
- an introduction to the concept of the real number system	
- base 10 notation	3 - 1
- other systems of numeration	3 - 5
- computations in other number bases	3 - 6
- binary notation	3 - 7
2) Counting and Classifying - Sets and Reasoning	
- counting and classifying	2 - 1
- sets and set notation	2 - 2
- Venn diagrams	2 - 3
- properties of set operations	2 - 4
- use of classifications in reasoning	2 - 5
3) Integers	
- the set of integers	4 - 1
- addition and subtraction of integers	4 - 2
- multiplication and division of integers	4 - 3
- clock arithmetic	4 - 4
- modular arithmetic	4 - 5
4) Elements of Number Theory	
- factors, multiples, and rules of divisibility	5 - 1
- prime and composite numbers	5 - 2
- greatest common divisor	5 - 4
- least common multiple'	5 - 5
5) Rational Numbers	
- concept of rational numbers	
- equivalence and order relations	6 - 2
- addition and subtraction of rational numbers	6 - 3
- multiplication and division of rational numbers	6 - 4
- decimal fractions	6 - 5
- ratio and proportion	6 - 6
- percents and applications	6 - 7
6) Real Numbers	
- concept of a real number	7 - 1
- decimal representation	7 - 2
- integers as exponents	7 - 3
- powers and roots	7 - 5