



DEPARTMENT OF MATHEMATICS AND COMPUTER & INFORMATION SCIENCE

## FOUNDATIONS OF MATHEMATICS II MA3020

### Departmental Syllabus

**TEXTBOOK:** **Problem Solving Approach to Mathematics for Elementary School Teachers**, 12th Edition, by Rick Billstein, Shlomo Libeskind, Johnny W. Lott, Pearson Publication, ISBN-13: 9780321990594

**Prerequisite:** Grade of C or higher in College Algebra (MA1020)

**COURSE DESCRIPTION:** A course designed primarily for students majoring in elementary education. MA3020 covers fundamental theory, historical context and underlying logic of mathematics taught in elementary school. Content is intended to complement the recommendations in the National Council of Teachers of Mathematics Standards, and emphasis is placed on problem solving and communication in mathematics. The syllabus includes topics from elementary combinations, probability, statistics, geometry and measurement.

**COURSE EVALUATION & GRADING:** Course grade will be based on midterm exams, quizzes, assignments, and Final Exam. The Final exam is cumulative and it counts at least 30% of the course grade. The grading scale is as follows:

|  |                           |                           |                           |             |
|--|---------------------------|---------------------------|---------------------------|-------------|
| A = [94, 100]<br>A <sup>-</sup> = [90, 93] | B <sup>+</sup> = [87, 89] | C <sup>+</sup> = [77, 79] | D <sup>+</sup> = [67, 69] | F = [0, 59] |
|  | B = [84, 86]              | C = [74, 76]              | D = [64, 66]              |             |
|  | B <sup>-</sup> = [80, 83] | C <sup>-</sup> = [70, 73] | D <sup>-</sup> = [60, 63] |             |

**TUTORIAL:** Drop-in tutorial is available in the Mathematics Learning Center.

**ACCOMMODATIONS FOR STUDENTS WITH SPECIAL NEEDS:** If you have or suspect you may have a physical, psychological, medical or learning disability that may impact your course work, please contact Stacey DeFelice, Director, The Office of Services for Students with Disabilities (OSSD), NAB, 2065, Phone: 516-628-5666, Fax (516) 876-3005, TTD: (516) 876-3083. E-mail: defelices@oldwestbury.edu. The office will help you determine if you qualify for accommodations and assist you with the process of accessing them. All support services are free and all contacts with the OSSD are strictly confidential.

## TOPICS TO BE COVERED

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12th Edition, by Rick Billstein, Shlomo Libeskind, Johnny W. Lott, Pearson  
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### **9 Probability**

- 9-1 Determining Probabilities
- 9-2 Multistage Experiments and Modeling Games
- 9-3 Simulations and Applications in Probability
- 9-4 Permutations and Combinations in Probability

### **10 Data Analysis/Statistics: An Introduction**

- 10-1 Designing Experiments/Collecting Data
- 10-2 Displaying Data: Part I
- 10-3 Displaying Data: Part II
- 10-4 Measures of Central Tendency and Variation
- 10-5 Abuses of Statistics

### **11 Introductory Geometry**

- 11-1 Basic Notions
- 11-2 Curves, Polygons, and Symmetry
- 11-3 More About Angles
- 11-4 Geometry in Three Dimensions

### **12 Congruence and Similarity with Constructions**

- 12-1 Congruence Through Constructions
- 12-2 Additional Congruence Theorems
- 12-3 Additional Constructions
- 12-4 Similar Triangles and Other Similar Figures

### **13 Congruence and Similarity with Transformations**

- 13-1 Translations and Rotations
- 13-2 Reflections and Glide Reflections
- 13-3 Dilations
- 13-4 Tessellations of the Plane

### **14 Area, Pythagorean Theorem, and Volume**

- 14-1 Linear Measure
- 14-2 Areas of Polygons and Circles
- 14-3 The Pythagorean Theorem, Distance Formula, and Equation of a Circle
- 14-4 Surface Areas
- 14-5 Volume, Mass, and Temperature