

Finite Mathematics M118

General Syllabus for all Classes at IU Northwest (starting Fall 2009)

Textbook: Finite Mathematics: An Applied Approach by Michael Sullivan,
10th Edition, Wiley, ISBN 978-0-470-12863-3

- 6.1 Sets
- 6.2 Number of Elements in a Set
- 6.3 Multiplication Principle
- 6.4 Permutations
- 6.5 Combinations
- 7.1 Sample Spaces
- 7.2 Properties of the Probability of an Event
- 7.3 Probability Problems using Counting Techniques
- 7.4 Conditional Probability
- 7.5 Independent Events
- 8.1 Bayes' Theorem
- 8.2 Binomial Probability
- OPTIONAL TOPIC: 8.3 Expected Value;

Departmental Common Midterm Exam (no later than in the 8th week of the semester; counts at least 25% of the final grade)

- 2.2 Systems of Linear Equations: Matrix Method
- 2.3 Systems of m Equations in n Unknowns
- 2.4 Matrix Algebra
- 2.5 Multiplication of Matrices
- 2.6 Definition of Matrix Inverse (remainder of section optional)
- 3.1 Systems of Linear Inequalities
- 3.2 Geometric Approach to Linear Programming
- 4.1 – 4.4 Linear Programming: Formulate a linear programming problem that models a real-life situation. Be sure to identify all variables used (exercises such as #41 – 46 in 4.1, #29 – 51 in 4.2, #29 – 36 in 4.3, #13 – 23 in 4.4, and #47 – 49 in review)
- 10.1 Markov Chains and Transition Matrices
- 10.2 Regular Markov Chains
- OPTIONAL TOPICS: Calculation of the inverse of a matrix, 4.1 Simplex Tableau; Pivoting,
- 10.3 Absorbing Markov Chains

Departmental Common Final Exam (at scheduled times during the Finals week; counts at least 25% of the final grade)