

Mathematics 181. A Mathematical World Syllabus for Instructors

- **Text:** “For All Practical Purposes: Mathematical Literacy In Today’s World”, 7th ed., W.H. Freeman and Company.
- **Course Description:** Introduction to selected areas of mathematical sciences through application to modeling and solution of problems involving networks, circuits, trees, linear programming, random samples, regression, probability, inference, voting systems, game theory, symmetry and tilings, geometric growth, comparison of algorithms, codes, and data management.
- **Prerequisite:** Three years of high school mathematics, including two years of algebra and one year of geometry.
- **Course Units (topics vary from semester to semester):**
 - (1) Voting Theory
 - (2) Graph Theory
 - (3) Game Theory
 - (4) Fair Division
 - (5) Apportionment
 - (6) Data Encryption
 - (7) Probability
 - (8) Statistics
 - (9) Mathematical Models for Resources