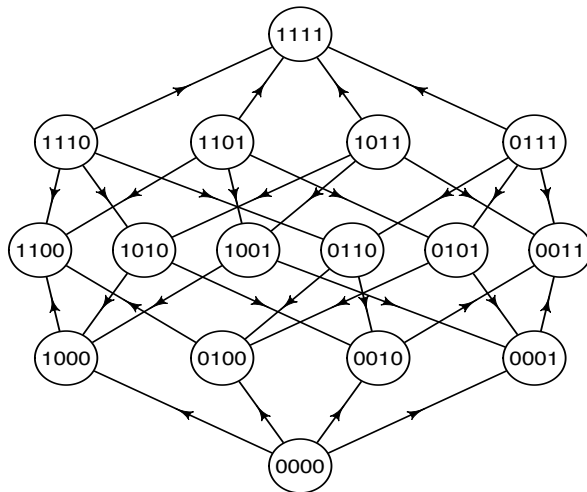


# Discrete Mathematics with Applications

MATH 396-001-2015F, MTH 4PM-5.15PM

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The course is an introduction to classical discrete methods with modern applications. **Prerequisite: Pre-calculus**

## Classical Discrete Methods

Elementary probability theory, graphs, prime numbers and congruence, proof techniques, permutations and combinations, Boolean algebra, Shannon Entropy

## Modern Applications

- Darwinian evolution and graphs
- Antibiotic resistance and HIV drug resistance
- Phylogenetics: determine family trees of organisms
- Genomics: human genetic diseases
- Network analysis, social networks
- Data bases and search engines: page rank
- Cryptology (RSA): secure communication