

**JAMESTOWN COMMUNITY COLLEGE**  
State University of New York

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**INSTITUTIONAL COURSE SYLLABUS**

**Course Title:** Discrete Mathematics

**Course Abbreviation and Number:** MAT 1670

**Credit Hours:** 3

**Course Type:** Lecture

**Course Description:** Students will master fundamental concepts of discrete mathematics that are essential for further studies in mathematics and computer science. Topics include symbolic logic and deductive reasoning, methods of proof, set theory, combinatorics, Boolean algebra, number theory, relations, and graph theory.

Prerequisite: MAT 1600 or high school Precalculus or equivalent.

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**General Education Requirements Met**

SUNY

Math

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**Student Learning Outcomes:**

Students who demonstrate understanding can:

1. Use logic to write proofs using a variety of methods
  2. Utilize sequences in a proof by induction
  3. Demonstrate a knowledge of the vocabulary and notation of set theory
  4. Use graphs and trees to illustrate relationships
  5. Interpret and draw inferences from appropriate mathematical models such as formulas, graphs, tables, or schematics. [SUNY Gen Ed – Mathematics]
  6. Represent mathematical information symbolically, visually, numerically, or verbally as appropriate. [SUNY Gen Ed – Mathematics]
  7. Employ quantitative methods such as arithmetic, algebra, geometry, or statistics to solve problems. [SUNY Gen Ed – Mathematics]
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**Topics Covered:**

- The Logic of Compound Statements
  - The Logic of Quantified Statements
  - Elementary Number Theory and Methods of Proof
  - Sequences, Mathematical Induction, and Recursion
  - Set Theory
  - Graphs and Trees
  - Topics from (time permitting): Indirect Argument, Algorithms, Strong Mathematical Induction & Well Ordering Principle, Functions, Relations, The Pigeonhole Principle, Formal Languages and Regular Expressions, and Finite-State Automata
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**Information for Students**

- Expectations of Students
    - [Civility Statement](#)
    - [Student Responsibility Statement](#)
    - [Academic Integrity Statement](#)
  - [Accessibility Services](#)  
Students who require accommodations to complete the requirements and expectations of this course because of a disability must make their accommodation requests to the Accessibility Services Coordinator.
  - [Get Help: JCC & Community Resources](#)
  - [Emergency Closing Procedures](#)
  - Course grade is determined by the instructor based on a combination of factors, including but not limited to, homework, quizzes, exams, projects, and participation. Final course grade can be translated into a grade point value according to the following:

A=4.0	B+=3.5	B=3	C+=2.5	C=2	D+=1.5	D=1	F=0
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  - Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, VA appointments) are welcome and encouraged to communicate these to the instructor.
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**Effective Date:** Fall 2023