



**CATALOG DESCRIPTION:** This is a survey course that satisfies the mathematics requirement for only certain programs. Topics include problem solving, sets, numeration systems and number theory, geometry, mathematics of graphs, apportionment and voting, mathematical systems, and the mathematics of finance.

**PREREQUISITE(S):** Mat 054 – Basic Algebra or appropriate placement test score

**COREQUISITE(S):** None

**CREDITS:** 3    **HOURS:** 3

**REQUIRED TEXT(S):** WebAssign for Aufmann/Lockwood/Nation/Clegg's Mathematical Excursions

**CENGAGE COURSE CODE:**

**SUPPLEMENTAL MATERIALS:**

**INSTRUCTOR INFORMATION:**

**OFFICE HOURS:**



<b>CORE COMPETENCIES:</b> The following core competencies are embedded in this curriculum: Apply appropriate mathematical and statistical concepts and operations to interpret data to solve problems; Use scientific method of inquiry through the acquisition of scientific knowledge; Use computer systems or other appropriate forms of technology to achieve educational and personal goals.	
<b>LEARNING ASSESSMENT</b>	
<b><i>Student Learning Outcomes:</i></b>	<b><i>Suggested Means of Assessment:</i></b>
Solve problems using inductive reasoning, deductive reasoning, patterns, and strategies	Homework, Quizzes, Tests, Projects and/or Final Exam
Apply basic properties of sets	Homework, Quizzes, Tests, Projects and/or Final Exam
Calculate conversions between various number systems including different bases	Homework, Quizzes, Tests, Projects and/or Final Exam
Categorize and apply basic concepts and formulas to Euclidean geometric figures	Homework, Quizzes, Tests, Projects and/or Final Exam
Do calculations and applications in modular arithmetic, including cryptography	Homework, Quizzes, Tests, Projects and/or Final Exam
Examine the social importance/implications of citizens at the government and individual levels	Homework, Quizzes, Tests, Projects and/or Final Exam
Study and apply graph theory and the mathematics of finance	Homework, Quizzes, Tests, Projects and/or Final Exam
Demonstrate comprehension of the topics covered in this course	Homework, Quizzes, Tests, Projects and/or Final Exam
<b>GRADING SYSTEM:</b>	
	C+ = 77 < 80
A = 90 < 100	C = 70 < 77
B+ = 87 < 90	D = 60 < 70
B = 80 < 87	F = Below 60

**DISABILITY SERVICES STATEMENT:** Warren County Community College is committed to providing all students equal access to learning opportunities. Student Services is the campus office that works with students who have disabilities to provide and/or arrange reasonable accommodations. Students who have, or think they may have, a disability (e.g. mental health, learning, vision, hearing, physical or systemic), are invited to contact Student Services to arrange a confidential discussion at (908) 835-2300 or by email at StudentServices@Warren.edu as soon as possible. Students registered for Disability Services with Student Services, who have requested accommodations for the current semester will be provided with an electronic letter detailing individual accommodations and are encouraged to contact the instructor early in the semester to discuss accommodations outlined in their letter.

**INSTRUCTIONAL SUPPORT CENTER:** The Instructional Support Center (ISC), located in Room 105 across from the library, provides academic support at no cost to WCCC students and



is available for courses in which they are currently enrolled. The ISC is staffed with trained professional and peer tutors who are ready to help you understand and succeed. For scheduling or further information, visit the ISC in person, online at <http://www.warren.edu/tutoring/> or by telephone at (908)835-2354.

**STATEMENT AND POLICY ON CHEATING, PLAGIARISM AND ACADEMIC DISHONESTY:** Students are required to perform all the work specified by the instructor, and are responsible for the content and integrity of all academic work submitted. A violation of academic integrity will occur if a student: (1) knowingly represents work of others as one's own, (2) uses or obtains unauthorized assistance in any academic work, (3) gives fraudulent assistance to another student, or (4) furnishes false information or other misuse of college documents.

In cases of suspected violation of academic integrity, the incident is to be reported to the Office of Academics. A student found guilty of violating the rule of academic integrity by the Vice President of Academics will be considered to have failed in personal obligation to the College; such failure will be subject to disciplinary action by the College. Unless otherwise notified, the instructor will allow students who are pending disciplinary action to attend class.

**REQUIRED FORMAT FOR RESEARCH PAPERS:** Research papers written for any Warren County Community College class must conform to the required documentation style. Papers written for humanities (and some social science) classes will follow the most recent edition of the Modern Language Association (MLA) in-text citation and bibliographic methods. Social science and science papers will require the use of the most recent edition of the American Psychological Association (APA) in-text citation and bibliographic methods.

Please consult with your instructor regarding the correct documentation style to use in his/her class.

**ATTENDANCE POLICY:** Students are expected to attend all class sessions of courses in which they are enrolled and are responsible for all material presented in class and all homework assignments.

Grades are based on the quality of work completed in meeting the requirements for a particular course, as stated in the course syllabus and catalog description.

Excessive absence may be considered sufficient cause for dismissal from class by an instructor or other appropriate college staff member. Any decision to exclude a student from class or the College due to excessive absence shall be subject to review by the President in accordance with established procedures. Students who have not attended class are not entitled to a refund of tuition.

**WCCC HAYTAIAN & MAIER LIBRARY:** (908) 835-2336 <http://warren.libguides.com>

Library Hours

Monday-Thursday 8am-8pm



Friday 8am-3pm

Check the Academic Calendar for specific holiday dates. Exceptions may apply during breaks and summer sessions. Any changes to the Library's hours are posted on the Library's web page and near the Library doors.

- **Passwords and Log-Ins**-The Library is responsible for resetting passwords for your Network account (email, computers, Wi-Fi, library resources, and printing). This cannot be reset over the phone. Please stop by the Library for help.
- **College IDs**-College IDs are required for all students. The Library is responsible for producing all ID cards. To get an ID card you must bring to the Library a current copy of your class schedule and another form of ID. Your student ID is also your library card and is needed to check materials out of the Library. Your first ID card is free and replacement cards are issued at a cost to the student.
- **Inter-Library Loan (ILL)**-The Library participates in a nation-wide inter-library loan program which is available free to all students and faculty. You can either submit ILL requests via the Internet (form available on the Library's web page) or in person at the circulation desk.

**TOPICAL OUTLINE:**

A. PROBLEM SOLVING

1. Inductive and Deductive Reasoning
2. Problem Solving with Patterns
3. Problem-Solving Strategies
- 4.

B. SETS

1. Basic Properties of Sets
2. Complements, Subsets, and Venn Diagrams
3. Set Operations

C. NUMERATION SYSTEMS AND NUMBER THEORY

1. Early Numeration Systems
2. Different Base Systems
3. Prime Numbers

D. GEOMETRY

1. Basic Concepts of Euclidean Geometry
2. Perimeter and Area of Plane Figures
3. Properties of Triangles



4. Volume and Surface Area

E. THE MATHEMATICS OF GRAPHS

1. Graphs and Euler Circuits
2. Weighted Graphs
3. Planarity and Euler's Formula
4. Graph Coloring

F. APPORTIONMENT AND VOTING

1. Introduction to Apportionment
2. Introduction to Voting
3. Weighted Voting Systems

G. MATHEMATICAL SYSTEMS

1. Modular Arithmetic
2. Applications of Modular Arithmetic

H. THE MATHEMATICS OF FINANCE

1. Simple Interest
2. Compound Interest
3. Credit Cards and Consumer Loans
4. Stocks, Bonds, and Mutual Funds
5. Home Ownership



**GRADING METHODS:**

**ITINERARY:**