

**PALOMAR COLLEGE**  
**COURSE OUTLINE OF RECORD FOR**  
**DEGREE CREDIT COURSE**

X Transfer course    X A.A. degree applicable course

**COURSE NUMBER AND TITLE:** Math 100 - Exploring Mathematics

**UNIT VALUE:** 3

**MINIMUM NUMBER OF SEMESTER HOURS:** 48

**BASIC SKILLS REQUIREMENTS:** Appropriate language and computational skills.

**ENTRANCE REQUIREMENTS:**

**PREREQUISITE:** A minimum grade of "C" in Math 60 or Math 56 or eligibility determined through the math placement process.

**COREQUISITE:** None

**RECOMMENDED PREPARATION:** None

**SCOPE OF COURSE:** Selected topics from logic, modern algebra, number theory, and geometry. Designed to give the student an introduction to the structure of mathematics and its applications. Recommended for liberal arts students.

**SPECIFIC COURSE OBJECTIVES:** The successful student will be able to:

1. Use inductive reasoning to make conjectures concerning number patterns and mathematical relations.
2. Use problem-solving strategies to analyze and solve mathematical problems and applications.
3. Analyze arguments to determine whether they are valid or invalid.

**CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:** At least the following topics will be covered.

1. Numerations Systems: Historical numeration systems; the Hindu-Arabic numeration system; number systems other than base ten, such as the binary, the octal, and the hexadecimal systems.
2. Logic: Logical reasoning and the determination of valid arguments.
3. Geometry: Basic Euclidean geometry, an introduction to some non-Euclidean geometries, topology, networks, and graph theory.
4. Number theory: Prime numbers, divisibility tests, perfect numbers, Fermat's Last Theorem, the Fibonacci Sequence, and the golden ratio.
5. Additional topics may be included at instructor's discretion.

**REQUIRED READING:**

Miller, Charles, Vern Heeren, and John Hornsby, Jr. Mathematical Ideas. 8th Edition. San Diego: Scott, Foresman Publishing Company. 1994.

**SUGGESTED READING:** None

**REQUIRED WRITING:** Problem-solving exercises on homework assignments and written tests are appropriate. In addition, students may be required to write reports from one paragraph to several pages explaining concepts or explaining and interpreting solutions to non-routine or applied problems.

**OUTSIDE ASSIGNMENTS:**

Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short term classes.

Students are expected to read the text, study lecture notes, and complete daily homework assignments. Homework assignments may include practice solving routine problems, explaining concepts, and solving applicaton or non-routine problems. Other outside assignments may include problem-solving reports or journals.

**INSTRUCTIONAL METHODOLOGY:**

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

This course may be offered as a distance education course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes  No

If yes, check all that apply. (See guidelines for preparation for definitions.)

- telecourse
- mediated instruction
- computer assisted instruction

**GRADING POLICY AND STANDARDS** (include methods of determining whether the stated objectives have been met by students):

Computation of semester grade may include the following methods of evaluation: In-class exams, take-home exams, homework assignments, essays or other evaluation methods. A comprehensive final exam (in class) is required. For example, the semester grade may be computed as follows:

Written exams	40 - 80%
Comprehensive final	20 - 40%
Homework or other outside assignments	0 - 20%

**IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?**

Yes  No  Number of times course may be taken for credit: 1

If yes, identify specific provision of Title 5 Division 2 section(s) 55761-55763 and 58161 which qualifies course as repeatable:

**CONTACT PERSON:** Jay Wiestling

**EXTENSION:** 2537

SIGNATURES ON FILE