

**BERGEN COMMUNITY COLLEGE**  
**DIVISION OF MATHEMATICS, SCIENCE AND TECHNOLOGY**  
**DEPARTMENT OF MATHEMATICS**

**COURSE SYLLABUS**

**MAT-130 CONTEMPORARY MATHEMATICS**

**COURSE DESCRIPTION:** Contemporary Mathematics is a study of some of the fundamental concepts in mathematics and computers. Topics considered include set theory, symbolic logic, number systems, principles of counting and probability. Applications of these concepts in various fields of study are included in the course.

**CREDITS/HOURS:** 3 credits, 3 hours

**PREREQUISITES:** MAT-032 or 035 or 040 or 048 or equivalent by testing.

**GENERAL EDUCATION COURSE:** Yes

**STUDENT LEARNING OUTCOMES:** Upon successful completion of this course, the student will be able to:

1. Use inductive reasoning to make a general conclusion and deductive reasoning to prove a conjecture.
2. Perform set operations and use set theory to solve real-world problems and to analyze survey data.
3. Construct truth tables and use them to test the validity of an argument
4. Perform operations in non-decimal number systems.
5. Use the Fundamental Counting Principle, permutations, and combinations to determine the number of possible outcomes for a sequence of events.
6. Compute probabilities and use them in real-world applications.

**ASSESSMENT MEASURES:** Each of the above listed student learning objectives will be assessed by,  

1. Written assignments and/or quizzes.
2. Written examinations
3. Other, as announced by the instructor

**COURSE GRADE:** Students should refer to the instructor's grading policy which will be distributed during the first meeting of the class.

**TEXTBOOK:** Mathematical Ideas, Miller, Heeren, and Hornsby, Pearson Publisher  
Custom Edition for Bergen Community College

## **COURSE CONTENT:**

<b><u>TOPIC</u></b>	<b><u>CHAPTER</u></b>	<b><u>SECTIONS</u></b>
Problem Solving	1	1.1, 1.3 Optional: 1.2
Set Theory	2	2.1, 2.2, 2.3, 2.4
Symbolic Logic	3	3.1, 3.2, 3.3, 3.4, 3.6 Optional: 3.5
Number Systems	4	4.3 Pages 151-152, 4.4 Optional: 4.1, 4.2
Counting Techniques	10	10.1, 10.2, 10.3, 10.5
Probability	11	11.1, 11.2, 11.5 Optional: 11.3, 11.4

### **ELECTRONIC DEVICES:**

**The Department of Mathematics prohibits the use of cell-phones, PDA's, laptops, headphones, IPODs and other such devices in mathematics classes unless otherwise specified in the grading policy provided by the instructor at the beginning of the semester.**

### **FACULTY ABSENCE PROCEDURE:**

“CLASS CANCELLATIONS” may be found by clicking on the bottom of the Bergen Community College website, [www.bergen.edu](http://www.bergen.edu). A list is posted in a glass case near A-129, the main corridor on the first floor and in Ender Hall. Students may consult these listings before going to class. If a cancelled class is not listed, it should be reported to the Department Office (A-325) or the Adjunct Office (C-107).

### **WEBSITE:**

Go to [www.bergen.edu/math](http://www.bergen.edu/math) for information regarding the Mathematics Department.