

**COURSE OUTLINE**  
**MT. HOOD COMMUNITY COLLEGE DISTRICT**  
**Gresham, Oregon 97030**

\* New \_\_\_\_\_  
 \* Revised 5/2007  
 \* Review only (no changes) \_\_\_\_\_  
 (Date)

\* COURSE TYPE Please check appropriate box:

- Lower Division Collegiate  
 Occupational Supplementary  
 Occupational Preparatory  
 Other Education, Including General Ed & Adult Ed

COURSE TITLE Introduction to Contemporary Mathematics

COURSE NUMBER MTH105 COURSE CREDIT 4

\* Lecture Hours 4 Wkly/Term Lab Hours \_\_\_\_\_ Wkly/Term Seminar Hours \_\_\_\_\_ Wkly/Term

\* GRADING STATUS:

- Letter Grade Only  
 S/U Only  
 Optional  
 No Grade

\* HEADCOUNT LOADING:

- Yes  No \* Factor \_\_\_\_\_

Guided Studies Requirement:

Student must be proficient in:

- Reading (RD90)  
 Writing (WR90)  
 Mathematics (MTH20)  
 Not applicable

For Instruction Office Use Only General Education Category Apply general requirement or distribution to:		
AA _____	AS _____	AS/OT-Bus _____
AAS _____	AGS _____	
VP Approval _____	Date _____	

Mathematics Department 5/2007

1) Prepared by \_\_\_\_\_ Date \_\_\_\_\_

4) Approved by Dean \_\_\_\_\_ Date \_\_\_\_\_

2) Approved by Distance Education Admin. \_\_\_\_\_ Date \_\_\_\_\_

5) Curriculum Committee \_\_\_\_\_ Date \_\_\_\_\_

3) Approved by Department Chair \_\_\_\_\_ Date \_\_\_\_\_

6) Approved by VP for Student Learning \_\_\_\_\_ Date \_\_\_\_\_

\* See legend/definition for explanation

**COURSE DESCRIPTION:** (for catalog)

This course surveys the broad applicability of mathematics as a problem solving tool and the breadth of phenomena that mathematics can model. A wide range of real world problems are examined using the tools of mathematics. The course focuses on development of mathematical maturity, problem solving, and research abilities. Course topics are selected from such areas as chaos, probability, statistics, geometry, graph theory, logic, music and sound, non-Euclidean geometries, personal finance, population growth, science and technology, symmetry, measurement, fractals, linear programming, and game theory. A computer laboratory is required. Any student who does not attend class during the first week may be dropped from the course

**PREREQUISITE:**

MTH 95 with a C or better, or suitable performance on the mathematics placement exam.

**INSTRUCTIONAL MATERIALS REQUIRED OF STUDENT: (text, supplies, etc.)**  
Text, Graphing Calculator TI-83 Plus or TI-84 is recommended, Engineering Paper

**STUDENT LEARNING OUTCOMES:**

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

**Mathematical Maturity**

1. Present coherent, efficient, reasoned, valid solutions to situations requiring problem solving.
2. Demonstrate attention to detail in their work by use of correct notation, clear explanations, and accurate results.
3. Determine if a solution is reasonable and verify results.

**Technology**

4. Use a spreadsheet program as a problem-solving tool.
5. Demonstrate calculator and/or computer skills appropriate to the topics covered.

**Variety of Mathematical Content**

6. Give examples of non-algebraic mathematical content.
7. Solve problems in non-algebraic settings.
8. Demonstrate understanding of a selected visual or geometric topic.
9. Apply mathematics in consumer situations (such as media, voting, finance, etc.).

**Infinity & Proof**

10. Distinguish between conclusive proof and evidence, and between conjecture and theorem.
11. Recognize incorrect or invalid reasoning in a given argument.
12. Apply and/or interpret an “if, . . . then” statement appropriately.
13. Use and/or describe the concept of infinity in the context of the topics covered.

**Research**

14. Research a mathematical topic beyond the information provided in the textbook.
15. Interpret and present research on a course topic.

**Real-World Applicability**

16. Use mathematical concepts learned in the course in real-world situations.
17. Describe real-world situations where mathematics is applicable.

**GENERAL INSTRUCTIONAL METHODS:**

The MHCC Mathematics Curriculum emphasizes conceptual understanding, real-world applications, multiple representations of problem situations, making connections, mathematical modeling and mathematical problem solving. This represents a shift away from technique mastery and procedural skills. For students to see mathematics as an integrated whole, the above objectives should be presented in a connected fashion and not treated as discrete topics or concepts.

**EVALUATION PROCESS:**

Assessment is based on a variety of methods noted below. A cumulative in-class exam is required. Passing the course with a C or better serves as a prerequisite for Math 243.

- Worksheets
- Projects

- In-class Individual Exams
- In-class Team Exams
- Take-Home Individual Exams
- Take-Home Team Exams
- Writing Assignments
- Daily Homework
- Attendance
- Teamwork/Participation