ROCHESTER COMMUNITY AND TECHNICAL COLLEGE COMMON COURSE OUTLINE

Course discipline/number/title: MATH 1111: Quantitative Reasoning

A. CATALOG DESCRIPTION
1. Credits: 3
2. Hours/Week: 3
3. Prerequisites (Course discipline/number): MATH 0094 or MATH 0098, or Concurrent Enrollment in MATH 0911, READ 0900.
4. Other requirements: Prerequisites may be satisfied by equivalent Math and/or Reading placement scores.
5. MnTC Goals (if any): Goal 4/Mathematics/Logical Reasoning

B. COURSE DESCRIPTION: This course is a problem-solving based Liberal Arts course for the student who wishes to acquire a broad background in mathematics. The topics that will be presented are: Ratio and Proportions, Finance Mathematics, Probability, and Statistics. Prerequisites may be satisfied by equivalent Math and/or Reading placement scores.

C. DATE LAST REVISED (Month, year): December, 2022

D. OUTLINE OF MAJOR CONTENT AREAS:
1. Modeling and Problem Solving
2. Ratios and Proportions
3. Finance Mathematics
4. Probability
5. Statistics

E. LEARNING OUTCOMES (GENERAL): The student will be able to:
1. Use and interpret ratios in multiple formats: rates/percentages/decimals.
2. Utilize technology to solve problems.
3. Analyze solutions to check reasonableness and evaluate accuracy of data.
4. Apply finance formulas to real world problems involving simple and compound interest, annual percentage rates, periodic rates, annuities, and loans.
5. Use and interpret percentages in various forms including probability, rate of return, percentiles, and relative frequency.
6. Apply the principles of probabilities, including counting methods, odds, and expected value.
7. Calculate measures of central tendency and dispersion for data presented in graphs, charts, and frequency distributions.
8. Apply the concepts of normal distributions.

F. LEARNING OUTCOMES (MNTC):
Goal 4/Mathematics/Symbolic Systems: The student will be able to:
1. Illustrate historical and contemporary applications of mathematics/logical systems.
2. Clearly express mathematical/logical ideas in writing.
3. Explain what constitutes a valid mathematical/logical argument (proof).
4. Apply higher-order problem solving and/or modeling strategies

G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:
1. Tests
2. Quizzes
3. Homework
4. Projects
5. Cooperative Group Assignments

H. RCTC CORE OUTCOME(S). This course contributes to meeting the following RCTC Core Outcome(s):
Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.

I. SPECIAL INFORMATION (if any): None