

Tennessee Technological University
Mathematics Department

MATH 1010: Math for General Studies

I. COURSE DESCRIPTION FROM CATALOG:

Mathematics as applied to real-life problems selected from such topics as preference schemes for voting, fair division and apportionment methods, routing and scheduling problems, analysis of graphs, growth and symmetry, and counting problems. Lec. 3. Cr. 3.

II. PREREQUISITE(S):

Two years of high school algebra and one year of high school geometry.

III. COURSE OBJECTIVE(S):

Build on (not replicate) the competencies gained through the study of two years of high school algebra and one year of high school geometry. Use mathematics to solve problems and determine if the solutions are reasonable. Use mathematics to model real world behaviors and apply mathematical concepts to the solution of real-life problems. Make meaningful connections between mathematics and other disciplines. Use technology for mathematical reasoning and problem solving. Apply mathematical and/or basic statistical reasoning to analyze data and graphs.

1. To introduce the student to topics in mathematics different from those encountered in traditional algebra, geometry, and pre-calculus courses with the emphasis on topics of recent development which demonstrate the applicability of mathematics to various real-life problems.
2. To develop an appreciation for the aesthetic elements of mathematics.

IV. STUDENT LEARNING OUTCOMES:

Upon successful completion of the course the student will be able to devise a strategy to solve a variety of real life problems such as preference schemes for voting, fair division and apportionment methods, routing and scheduling problems, graph analysis, and counting, and to draw conclusions using mathematical reasoning.

V. TOPICS TO BE COVERED:

Selections may be made from the first 13 chapters:

1. The Mathematics of Elections
2. The Mathematics of Power
3. The Mathematics of Sharing
4. The Mathematics of Apportionment
5. The Mathematics of Getting Around
6. The Mathematics of Touring
7. The Mathematics of Networks
8. The Mathematics of Scheduling
9. Population Growth Models
10. Financial Mathematics
11. The Mathematics of Symmetry
12. Fractal Geometry
13. Fibonacci Numbers and the Golden Ratio

VI. ADDITIONAL INFORMATION:

VII. POSSIBLE TEXTS AND REFERENCES:

Excursions in Modern Mathematics, 9th edition, by P. Tannenbaum

VIII. ANY TECHNOLOGY THAT MAY BE USED:

IX. STUDENT ACADEMIC MISCONDUCT POLICY:

Maintaining high standards of academic integrity in every class at Tennessee Tech is critical to the reputation of Tennessee Tech, its students, alumni, and the employers of Tennessee Tech graduates. The Student Academic Misconduct Policy describes the definitions of academic misconduct and policies and procedures for addressing Academic Misconduct at Tennessee Tech. For details, view the Tennessee Tech's Policy 217 – Student Academic Misconduct at [Policy Central](#).

X. DISABILITY ACCOMMODATION:

Students with a disability requiring accommodations should contact the Office of Disability Services (ODS). An Accommodation Request (AR) should be completed as soon as possible, preferably by the end of the first week of the course. The ODS is located in the Roaden University Center, Room 112; phone 372-6119. For details, view the Tennessee Tech's Policy 340 – Services for Students with Disabilities at [Policy Central](#).