Tennessee Technological University

Mathematics Department

MATH 2610: Discrete Structures

I. COURSE DESCRIPTION FROM CATALOG: Topics to be chosen from algebra of sets and relations, functions, algebras, graphs, and digraphs, monoids and machines, groups and subgroups, computer arithmetic, binary codes, logic and languages. Lec. 3. Cr. 3.

II. PREREQUISITE(S): C or better in MATH 1910.

III. COURSE OBJECTIVES / STUDENT LEARNING OUTCOMES:

1. Apply logical reasoning to formulate and evaluate statements.
2. Analyze and manipulate sets using set theory concepts.
3. Utilize fundamental methods of proof to validate assertions.
4. Evaluate and manipulate relations and functions.
5. Recall essential definitions concerning integers.
6. Learn and apply counting methods to compute probabilities.

IV. TOPICS TO BE COVERED:

a. A Logic (Sections 1.1-1.6)
b. Sets (Sections 2.1-2.4)
c. Methods of proof (Sections 3.1-3.7)
d. Sequences and mathematical induction (Sections 4.1-4.3)
e. Relations and functions (Sections 5.1-5.4)
f. Integers (Sections 7.1-7.5), RSA Cryptosystem
g. Counting and probability (Sections 8.1, 8.2, 8.4, 8.5; Sections 9.1, 9.2; Sections 10.1, 10.2)

V. ADDITIONAL INFORMATION:

This course is cross-listed with CSC 2700.

VI. POSSIBLE TEXTS AND REFERENCES:

-57766-730-1. ISBN 13: 978-1-57766-730-8.

VII. ANY TECHNOLOGY THAT MAY BE USED:

VIII. 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