Based on ABET ETAC Student Learning Outcomes

1. **Course Number and Name:**
   CSET 2520 Discrete Structures
2. **Credits and Contact hours:**
   Credits: 3 hours, Contact: 3 lecture hours;
3. **Instructor's or course coordinator's name:**
   Jared Oluoch
4. **Text book, title, author, and year:**
   Discrete Mathematics and Its Applications, 8th Edition, Kenneth H. Rosen, 2018
   a. **Other supplemental materials:**
      Course Web Site and various web references assigned by instructor
5. **Specific Course Information:**
   a. **Brief description of the content of the course (catalog description):**
      Teaches how to think logically and mathematically. Topics include mathematical reasoning, combinatorial analysis, discrete structures, algorithmic thinking, and applications and modeling.
   b. **Pre-requisites, or co-requisites:**
      CSET 1100
6. **Specific goals for the course:**
   a. **Specific outcomes of instruction:**
      1. Read, comprehend, and construct mathematical arguments.
      2. Count or enumerate objects.
      3. Work with abstract mathematical structures used to represent discrete objects and relationships between these objects.
      4. Specify an algorithm, verify the algorithm works, and analyze the computer memory and time required to perform it.
      5. Identify and understand the many applications of discrete mathematics in computer science and data networking.

Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course: 1

1. An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly defined engineering problems appropriate to the discipline.

7. **Brief list of topics to be covered:**
   1. The Foundations: Logic and Proofs
   2. Basic Structures: Sets, Functions, Sequences, Sums, and Matrices
   3. Algorithms
   4. Number Theory and Cryptography
   5. Induction and Recursion

6. Counting
7. Discrete Probability
8. Advanced Counting Techniques
9. Relations
10. Graphs