I. COURSE DESCRIPTION FROM CATALOG: Topics to be covered include permutations, combinations, multisets, partitions, recurrence relations, generating functions, and the principle of inclusion-exclusion. Lec. 3. Cr. 3.

II. PREREQUISITE(S):
C or better in MATH 3400 or consent of instructor.

III. COURSE OBJECTIVE(S): Students understand some of the concepts of enumeration and improve their ability to read and create mathematical proofs.

IV. TOPICS TO BE COVERED:
- Enumeration-Sum Principle, Product Principle, Permutations, Combinations, Binomial and Multinomial theorems
- Algebraic Counting Techniques-Principle of Inclusion-Exclusion, Generating Functions, Exponential Generating Functions, Recurrence Relations
- Miscellaneous-Stirling Numbers, Partitions of Integers, Ferrer's diagrams, Combinatorial Proofs, and Rook Polynomials

V. ADDITIONAL INFORMATION:
Students taking the course for graduate credit are expected to complete a project such as reading a paper involving combinatorics and presenting it to the class.

Graduate credit is earned on the basis of additional work required by the instructor per TTU Graduate Catalog.

VI. POSSIBLE TEXTS AND REFERENCES:

VII. ANY TECHNOLOGY THAT MAY BE USED: