

**GENERALIZED DEGENERATE CHANGHEE-GENOCCHI
NUMBERS AND POLYNOMIALS**

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Abstract: The degenerate Changhee-Genocchi numbers (and also Changhee - Genocchi), which appear in analysis and combinatorial mathematics and play a significant role in the applications and theory of mathematics, are associated with the Daehee, Cauchy, and Stirling numbers with several extensions and have proven to be powerful tools in varied subjects in combinatorics and analysis. In combinatorics and analytic number theory, many special numbers such as degenerate Changhee-Genocchi numbers, Changhee-Genocchi numbers, derangement numbers, and Stirling numbers play an important role to solve and analyze problems of combinatorial, analytical, and many other disciplines. In this paper, we introduce generalized degenerate Changhee-Genocchi polynomials and analyze some properties by providing several relations and applications. We first attain diverse relations and formulas covering addition formulas, recurrence rules, implicit summation formulas and relations with the earlier polynomials in the literature. By using their generating function, we derive some new relations including the Stirling numbers of the first and second kinds. Moreover, we introduce generalized higher-order degenerate Changhee-Genocchi polynomials. We also derive some new identities and