

1125-11-2081 **Nathan S McAnally*** (nmcanall@citadel.edu). *A Generalization of Identities from Fibonacci Numbers to the Generalized Fibonacci Polynomial.*

A sequence that satisfies the recurrence relation $F_0(x) = 0$, $F_1(x) = 1$ and $F_n(x) = xF_{n-1}(x) + F_{n-2}(x)$ for $n \geq 2$ is called the Fibonacci polynomial. The Generalized Fibonacci Polynomial (GFP) is a natural generalization of the above-mentioned sequence. Familiar examples of the GFP include Fibonacci polynomials, Lucas polynomials, Pell polynomials, Pell-Lucas polynomials, Fermat polynomials, Fermat-Lucas polynomials, both types of Chebyshev polynomials, Jacobsthal polynomials, Jacobsthal-Lucas polynomials and both types of Morgan-Voyce polynomials. We classify the GFP into two types, namely Fibonacci type and Lucas type. A Fibonacci type polynomial is equivalent to a Lucas type polynomial if they both satisfy the same recurrence relations. In this talk, we will discuss our process to generalize identities from Fibonacci numbers and Lucas numbers to the GFP. (Received September 19, 2016)