1125-11-1772 **Antara Mukherjee***, mukherjeea1@citadel.edu. *GCD properties of Generalized Fibonacci Polynomials.* Preliminary report.

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. It is known that the greatest common divisor of two Fibonacci numbers is a Fibonacci number. However, this gcd property does not always hold for every GFP sequence. In this presentation I will provide a definition of generalized Fibonacci polynomials and classify them in two types depending on their Binet formula I will then give a complete characterization of those polynomials that satisfy the Fibonacci gcd property. I will also show that the polynomials that satisfy the Fibonacci gcd property are Fibonacci polynomials, Pell polynomials, Fermat polynomials, Chebyshev polynomials of second kind, Jacobsthal polynomials and one type of Morgan-Voyce polynomials while the polynomials that do not satisfy the Fibonacci gcd property are: Lucas polynomials, Pell-Lucas polynomials, Fermat-Lucas polynomials, Chebyshev polynomials of first kind, Jacobsthal-Lucas polynomials and second type of Morgan-Voyce polynomials. These last set of polynomials partially satisfy the mentioned property. (Received September 19, 2016)