There are many examples of equations which have no integer solutions but do have solutions modulo $n$ for every positive integer $n$. For example, there are classes of polynomials that possess this property. Additionally, in 2007 Mollin was able to provide conditions for Diophantine equations of the form $ax^2 + by^2 = \pm 1$ so that there are no solutions over the integers, yet there are solutions modulo $n$ for every $n$. In this talk, we investigate equations which have similar properties. (Received September 11, 2014)