Let \( \{\gamma_k\} \) be a sequence of real numbers and let \( \{H_k(x)\} \) denote the set of Hermite polynomials. Define a linear operator \( T : \mathbb{R}[x] \to \mathbb{R}[x] \) by declaring \( T[H_k(x)] = \gamma_k H_k(x) \) for all \( k \). This linear operator can be represented in the form \( T = \sum_{k=0}^{\infty} T_k(x) D^k \), where \( D \) denotes differentiation with respect to \( x \). We seek to determine an explicit form of the polynomial coefficients \( T_k(x) \) in the differential operator representation. (Received September 22, 2011)