Abstract: For $q$ a power of a prime, consider the ring $\mathbb{F}_q[T]$. Due to the many similarities between $\mathbb{F}_q[T]$ and the ring of integers $\mathbb{Z}$, we can define for $\mathbb{F}_q[T]$ objects that are analogous to elliptic curves, modular forms, and modular curves. In particular, for $n$ an ideal in $\mathbb{F}_q[T]$, we can define the modular curve $X_0(n)$, a complete smooth curve endowed with both an algebraic structure over $\mathbb{F}_q(T)$ and an analytic structure over a complete and algebraic closed field of finite characteristic. Given such a curve, it is a natural question to enquire about its Weierstrass points, an intrinsic, finite set of points on the curve that are of geometric significance. In this talk we will present the results we have obtained in this setting, highlighting along the way the interesting ways in which the situation in finite characteristic differs from that in characteristic 0.