We start with a finite dimensional algebra $\lambda$ over an algebraically closed field $k$ of characteristic 2 such that $\lambda$ is isomorphic to $kS_4$, where $S_4$ is the symmetric group on 4 letters. The objective of the first part of this work is to find ALL $\lambda$-modules $M(S)$ with underlying string $S$ such that the stable endomorphism ring of $M(S)$ over $\lambda$ is isomorphic to $k$. The reason is that if this ring is isomorphic to $k$ then $M(S)$ has a well-defined universal deformation ring which is a complete local Noetherian ring with residue field $k$. First, we consider the simple $\lambda$-modules $S_0$ and $S_1$. Then we analyze all non-simple finite $\lambda$-modules. Although the study of non-simple $\lambda$-modules is infinite at first, we show we can make it finite. We conclude that the stable endomorphism ring is $k$ only for all modules $X$ that are contained in the Auslander-Reiten component of the simple $\lambda$-module $S_0$. In the near future we hope to find the isomorphism type of the universal deformation ring for the modules $X$ that lie in the component of the AR-quiver of $S_0$. (Received September 26, 2006)