In this poster, we present Yang-Mills theory for a deformed Heisenberg $C^*$-algebra, the deformation quantization of Heisenberg manifold, $D_{c,h}^{c,h}$, first invented by Marc Rieffel, using the noncommutative geometrical method developed by Alain Connes. In particular, we will describe a Grassmannian connection and its curvature on a projective module $\Xi$ over the noncommutative $C^*$-algebra, $D_{c,h}^{c,h}$, and produce a specific element $R$ in this projective module that determines both a non-trivial Rieffel projection and the curvature of the corresponding Grassmannian connection. Also, we will introduce the notion of multiplication-type elements of $E_{c,h}$, $E_{\mu\nu}$. In our main result, we use a multiplication type operator to construct a certain family of connections on the deformed Heisenberg $C^*$-algebra that give rise to critical points of the Yang-Mills functional. (Received August 24, 2008)