Let $I \subset J$ be a pair of arbitrary ideals in an equidimensional and universally catenary Noetherian local ring. We prove that $I$ and $J$ have the same integral closure if and only if they have the same multiplicity sequence introduced by Achilles and Manaresi. We also obtain a Principle of Specialization of Integral Dependence, which gives a condition for integral dependence in terms of the constancy of the multiplicity sequence in families. (Received February 03, 2020)