closed immersion

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A morphism of schemes $f : (X, \mathcal{O}_X) \longrightarrow (Y, \mathcal{O}_Y)$ is a *closed immersion* if:

1. As a map of topological spaces, $f : X \longrightarrow Y$ is a homeomorphism from X into a closed subset of Y, and

2. the morphism of sheaves $\mathcal{O}_Y \longrightarrow \mathcal{O}_X$ associated with f is an `http://planetmath.org/Abelia` in the category of sheaves.

This notion is the analog of the notion of `http://planetmath.org/Immersion`closed immersion in the category of differential manifolds.