2012-09-13 Predrag *What does 'kernel' mean in 'integral kernel'?* The English usage is a translation of the German 'kern', meaning kernel, core, nucleus, i.e., something central or essential. There are two usages in mathematics, kernels of *transforms*, and kernels of *mappings*. In integral equations and Fourier analysis the term was first used by Fredholm (1903) and Hilbert (1904), referring to an integrable generalization $K(x, y)$ of a matrix M_{jk}. The use in algebra is unrelated, with 'kernel' of a homomorphism being the inverse image of the zero element, a synonym for 'null-space' of a linear transformation between vector spaces.

Sources: mathoverflow.net, *Earliest known uses of some of the words of mathematics*, and encyclopediaofmath.org, A nice exposition is given in this wiki on Fredholm theory, and this wiki on kernels of mappings.