

CE394M: Isoparametric elements and Gauss integration

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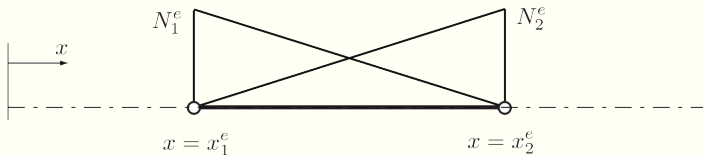
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February 7, 2019

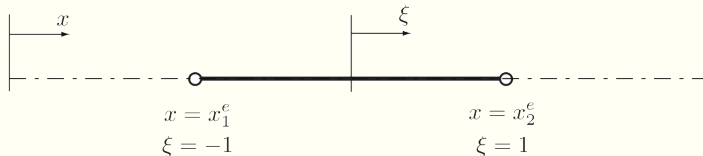
1 Isoparametric elements

Isoparametric mapping in 1D



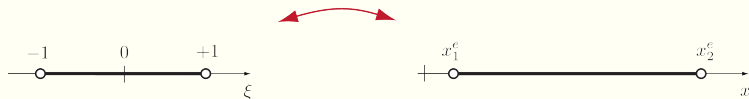
Shape functions for a two-noded element.

$$N_1(x) = 1 - \frac{x - x_1^e}{x_2^e - x_1^e} \quad N_2(x) = \frac{x - x_1^e}{x_2^e - x_1^e}$$



Global coordinate x and local coordinate ξ

Isoparametric mapping in 1D



Mapping of the parent element onto the physical element.