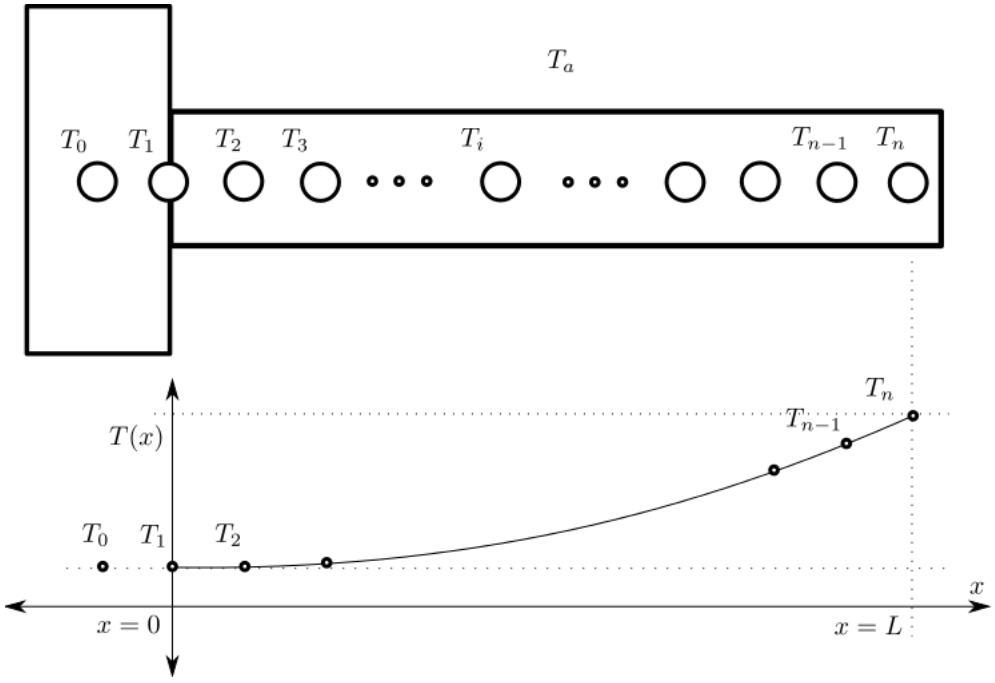
ME 3001-001, Fall 2019

Activity : FDM - 1D Steady State Conduction



The *1D Rod* undergoing conduction and convection can be modeled with following ODE.

$$\frac{d^2T}{dx^2} + h^*(T_a - T) = 0$$

with boundary conditions: $T(x = L) = T_n, \quad \frac{dT}{dx}|_{x=0} = 0$

and constants: $h^* = 0.05 \ \ (m^-2), \quad L = 10 \ \ (m), \quad \Delta x = 0.1 \ \ (m), \quad T_a = 200 \ \ (K)$