Consider a graph on four nodes v_1, v_2, v_3, v_4 in which there are edges (v_1, v_2), (v_2, v_3), (v_3, v_4), (v_4, v_1), of cost 2 each, and an edge (v_1, v_3) of cost 1.

Then every edge belongs to some minimum spanning tree, but a spanning tree consisting of three of the edges of cost 2 would not be minmum.

[1] ex27.96.222