$$W_{n,m} = \begin{bmatrix} w_{1,1} & w_{1,2} & \dots & w_{1,m} \\ w_{2,1} & w_{2,2} & \dots & w_{2,m} \\ \vdots & \vdots & & \vdots \\ w_{n,1} & w_{n,2} & \dots & w_{n,m} \end{bmatrix}$$

where n is the number of neurons and m is the number of input signals