A new neural network structure of the modular reduction are presented. The new structure is oriented to learning by examples: the number of layers is fixed for any module, the slow approach to the resulting value is excluded, the result is the remainder modulo and does not require an adjustment. Developed three training algorithm of finite ring neural network: training sample inputs and desired outputs, training only on the desired output and training only for the sampling of input signals. The developed algorithms allow to adapt the finite ring neural network to the new module and, unlike the known solutions, do not require changing the network architecture.