Process Terms and Abbreviations

Feed	The liquid, which is separated by the membrane into permeate and retentate.
Permeate	The filtrate, which passes the membrane.
Retentate	The concentrate containing compounds, which are rejected by the membrane.
Transmembrane pressure (TMP)	Pressure, which creates flow through the membrane: $$TMP = \frac{(P_1 + P_2)}{2} - P_3$$
Pressure drop (dp)	The dp is created by the crossflow over the module. It is defined as the difference between inlet pressure and outlet pressure: $$dp = P_1 - P_2$$
Flux	Flux is the permeate flow rate Q_P per membrane area A: $$Flux = \frac{Q_P}{A}$$
Crossflow	Crossflow is the liquid flow tangential to the membrane surface. It creates a shear force to reduce concentration polarization and fouling on the membrane.
Volumetric concentration ratio (VCR)	The VCR in a batch process is defined as the ratio of feed and retentate volume: $$VCR = \frac{V_F}{V_R}$$
Rejection coefficient (R)	The rejection coefficient is defined as the separation effect on the membrane for a solute i. $$R_i = 1 - \frac{C_{Pi}}{C_{Ri}}$$
Diafiltration (DF)	Diafiltration is the process of diluting the retentate to lower the concentration of molecules which can pass through the membrane. It allows further purification of the retentate or to increase the permeate yield.
Cleaning in Place (CIP)	Cleaning in place is a procedure for removal of foulants from the system without dismantling it.
Clean Water Flux (CWF)	CWF is the water flow through the membrane at defined operating parameters (pressure, temperature, water quality). It is used to evaluate the cleaning efficiency after the CIP.