BAREBONES MODEL:

VARIABLES:

$Y \equiv$ output $\qquad\qquad \dot{Y} \equiv$ output growth $\qquad\qquad \dot{Y}^* \equiv$ LTSG

$LF \equiv$ labor force $\qquad\qquad \dot{LF} \equiv$ labor force growth

$LP \equiv$ labor productivity $\qquad\qquad \dot{LP} \equiv$ labor productivity growth

$E_L \equiv$ Employment level $\qquad\qquad \dot{E} \equiv$ employment growth

$P \equiv$ price level $\qquad\qquad \dot{P} = \pi \equiv$ inflation rate $\qquad\qquad \pi^* \equiv$ target inflation rate

$POP \equiv$ working age population $\qquad \dot{POP} \equiv$ working age population growth

$U_L \equiv$ Unemployment level $\qquad U \equiv$ unemployment rate $\qquad\qquad U^* \equiv$ NAIRU

$f \equiv$ fed funds rate $\qquad\qquad r \equiv$ real fed funds rate $\qquad\qquad r^* \equiv$ neutral r

EQUATIONS:

(1) Output equation $\qquad \dot{Y} = \dot{LF} + \dot{LP} \qquad\qquad \dot{Y}^* \equiv \dot{LF}^* + \dot{LP}^*$
(2) IS Curve $\qquad\qquad Y_t = A - ar_t$
(3) Phillips Curve $\qquad\quad \pi_1 = \pi_e + \alpha(U^* - U_1)$
(4) Okun's Law $\qquad\quad \dot{Y}_t = \dot{Y}^* + c(U_{t-1} - U_t)$
(5) Taylor Rule $\qquad\quad f = \pi + \alpha(\pi - \pi^*) + \beta \cdot (U^* - U) + r^*$

Expanded Equations:

(1.1) $\quad \dot{LP} = f(K, L_E, S) \quad K \equiv$ capital stock $\quad L_E \equiv$ efficiency of labor $\;S \equiv$ Solow residual
(1.2) $\quad LF = POP * LFPR$
(1.3) $\quad LF = (POP_{16-24} * LFPR_{16-24}) + (POP_{25-54} * LFPR_{25-54}) + (POP_{55-64} * LFPR_{55-64}) + (POP_{\geq 65} * LFPR_{\geq 65})$
(1.4) $\quad LFPR = LF/POP$
(1.5) $\quad U_L = LF - E_L \qquad U_L \neq POP - E_L$
(1.6) $\quad U = (U_L/LF) * 100$

Real World Practices:

(1.1) $\quad \dot{LP}$ shifts periodically, and defies prediction. Forecasters extrapolate.
(1.2) $\quad \pi_e$ are backward looking, excepting amid large oil and/or TW$ shocks
(1.3) $\quad U^*$ is identifiable, after the fact. We only know we pierced U^*, when π accelerates
(1.4) $\quad r^*$ changes, cycle to cycle.
(1.5) $\quad \alpha$ Phillips Curve parameter, appears to be quite low, amid 'anchored' π expectations
(1.6) $\quad \beta$ Taylor rule parameter, historically is "1", when using U to calibrate resource use.