EC 313, Summer 2019 **Name:** _____
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Midterm **UO ID:** _____

FORMULAS

real GDP per person: $\frac{\mathbf{Y_t}}{\mathbf{population}}$ — Y_t: real GDP at t

real GDP growth: $\frac{\mathbf{Y_t - Y_{t-1}}}{\mathbf{Y_{t-1}}}$ — Y_{t-1}: real GDP at t-1

GDP deflator: $\mathbf{P_t} = \frac{\mathbf{nGDP}}{\mathbf{rGDP}} = \frac{\mathbf{\$Y_t}}{\mathbf{Y_t}}$ — $\$Y_t$: nominal GDP

inflation rate: $\pi_\mathbf{t} = \frac{\mathbf{P_t - P_{t-1}}}{\mathbf{P_{t-1}}}$

labor force: $\mathbf{L = N + U}$ — U: unemployment; N: empolyment

unemployment rate: $\mathbf{u} = \frac{\mathbf{U}}{\mathbf{L}}$

participation rate: $\frac{\mathbf{L}}{\mathbf{population}}$

production/outoput/supply/GDP: $\mathbf{Y = C + I + G}$ — C: consumption; I: investment; G: gov't spending

demand: $\mathbf{Z \equiv C + I + G}$

consumption: $\mathbf{C = c_0 + c_1 \times Y_D}$

disposable income: $\mathbf{Y_D = Y - T}$ — Y: income; T: tax

goods market equilibirum: $\mathbf{Y} = \frac{\mathbf{1}}{\mathbf{1-c_1}}[\mathbf{c_0 + I + G - c_1 T}]$

demand for money: $\mathbf{M^d = \$Y \times L(i)}$

supply for money: $\mathbf{M^s = M}$

money market equilibirum: $\frac{\mathbf{M}}{\mathbf{P}} = \mathbf{YL(i)}$

IS relation: $\mathbf{Y = C(Y - T) + I(Y, i) + G}$

LM relation: $\mathbf{i} = \bar{\mathbf{i}}$

real interest rate: $\mathbf{r_t = i_t - \pi^e_{t+1}}$ — i_t: nominal interest rate; π^e_{t+1}: expected inflation

risk premium: $\mathbf{x} = (\mathbf{1 + i})\frac{\mathbf{p}}{\mathbf{1-p}}$ — i: interest rate on risk-free borrowing; p: probability of default

extended IS relation: $\mathbf{Y = C(Y - T) + I(Y, r + x) + G}$ — r: real interest rate; x: risk premium

extended LM relation: $\mathbf{r} = \bar{\mathbf{r}}$ — $\bar{r}$: policy rate