Wilf Csaplar Jr. Economics 302 Homework #4 **Due Friday 2/9**

Place your name on the back of this sheet of paper and nowhere else. Staple your answers face up on the front of this sheet of paper. Failure to follow these directions will cost you 10 points. Your assignment will be typed, except graphs can be drawn by hand and mathematical equations can be done by hand. Failure to type it will cost you 10 points. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

1) (20 points) Explain $uc_K = \frac{(r+d)p_K}{1-\tau}$

2) (20 points) Draw the $MPK^f/uc_K$ diagram. Illustrate the effects of a decrease in the real interest rate. Explain why the curve(s) moved as drawn. What happens to the user cost of capital, the desired amount of capital, and the amount of investment?

3) (20 points) Draw the $MPK^f/uc_K$ diagram. Illustrate the effects of an increased used of AI. Explain why the curve(s) moved as drawn. What happens to the user cost of capital, the desired amount of capital, and the amount of investment? You might find the following article (which will turn 40 years old this summer) interesting:
https://onlinelibrary.wiley.com/doi/full/10.1609/aimag.v5i2.433

4) (20 points) Draw the $MPK^f/uc_K$ diagram. Illustrate the effects of the changes in the corporate tax rate in New Jersey. (See the article below.) Explain why the curve(s) moved as drawn. What happens to the user cost of capital, the desired amount of capital, and the amount of investment?
https://www.illinoispolicy.org/illinois-corporate-income-tax-rate-hits-no-2-in-u-s/

5) (20 points) Draw the $MPK^f/uc_K$ diagram. Illustrate the effects of climate change increasing the depreciation rate of buildings. Explain why the curve(s) moved as drawn. What happens to the user cost of capital, the desired amount of capital, and the amount of investment?