ECO 301: Money and Banking
Instructor: Dr. James Murray
Homework: Measuring Interest Rates

Learning Objective: LO3: Predict changes in interest rates using fundamental economic theories including present value calculations, behavior towards risk, and supply and demand models of money and bond markets.

1. (12 points) You are considering buying a coupon bond on the secondary market with a 6 years left until its maturity date. It has a face value of \$2,000, a 5% coupon rate, and makes annual coupon payments. The current market interest rate is 4%. How much would you be willing to pay for this bond?

2. (12 points) Congratulations! You have just graduated college and you landed a high paying job of your dreams! Unfortunately, you also have a \$50,000 student loan balance, and payments begin next month. You chose to repay your loan with fixed monthly payments over a period of 10 years. The interest rate on your loan is 3%. What are your monthly payments? Show your calculations.

3. (12 points) Suppose you have a fixed payment car loan. You will make monthly fixed payments of \$150 for 48 months. Suppose over the next two years you expect the market interest rate to be 3% (assume a monthly rate of $3/12\% = 0.25\%$), then rise to 4% after that (assume a monthly rate of $4/12 = 0.33\%$). Assume you make your first payment one month from today, and payments continue for 48 months). What is your present value for this series of loan payments?

4. (12 points) Look up and report the yield to maturity on a 10 Year U.S. Treasury bond. Please report the source for the yield and the date you found the quote. If you bought a newly issued bond today with a face value of \$1,000, what would you have pay for it?

5. (12 points) Suppose that next year the yield on the 10 Year U.S. Treasury is 3%. If you sold the bond next year that you purchased in the previous question, what would be your capital gain / loss?

6. (12 points) Look up and report the yield to maturity on a 10 Year Greece Government bond. Please report the source for the yield and the date you found the quote. If you bought a newly issued bond today with a face value of \$1,000, what would you have pay for it?

7. (28 points) Write a short essay (one or two paragraphs) to serve as a rough draft for your final exam on this topic. Discuss the importance of interest rates and present value calculations in informing consumers' decisions to borrow money or make a financial investment.