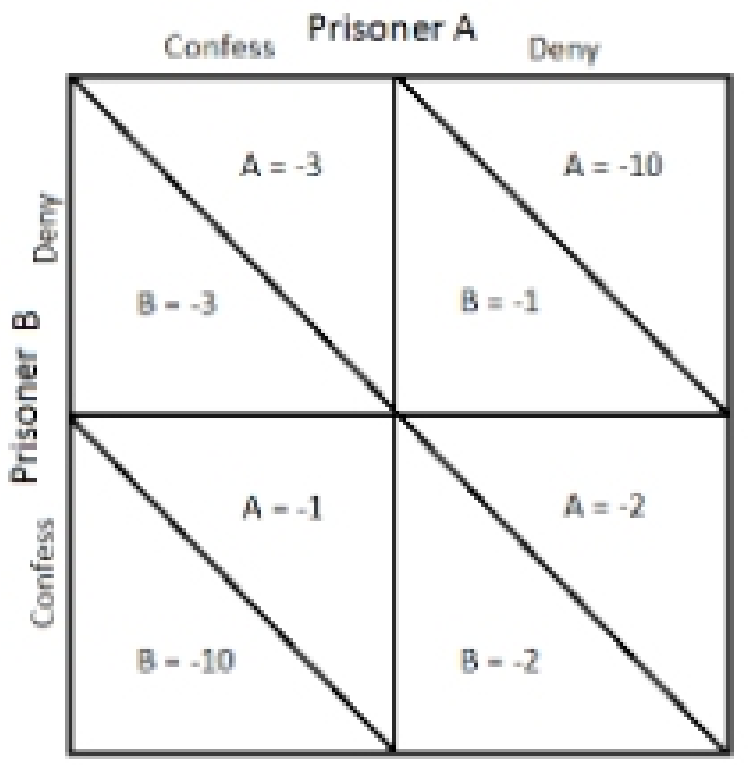
April 30, 2012

I. Economics
   a. Oligopoly
      1. Characteristics
         a. Few firms
         b. Imperfect barrier to entry
            1. Resource monopolies
            2. Large start-up costs
      2. Example
         a. 2-firm oligopoly
            1. Duopoly
         b. Team profit is maximized at (P_M, Q_M)
         c. Individual profit grows with cheating while joint profit decreases
      3. Gain theory
         a. The study of strategic interaction
         b. Prisoner's dilemma
            1. Model for the 2-firm oligopoly game
            2. Example



               a. Finding equilibrium
                  1. Options
                     a. If B confesses, A confesses
                     b. If B denies, A confesses
                     c. If A confesses, B confesses
                     d. If A denies, B confesses
                  2. Confessing box is dominant strategy equilibrium
                     a. Best strategy for each player regardless of what the other player does
                        1. A and B = Confess
                  3. Denying box is group optimal outcome
                     a. Best strategy for both players
   b. Firm concentration
      1. Ratio percent of industry sales by the largest 4 firms
   c. Individual retirement accounts (IRAs)
      1. Up to $6,000 per year

2. Not through employer
3. Types
    a. Roth
    b. Traditional
4. Deferred compensation plans
    a. 401K
    b. 403B
    c. Through employer
    d. Up to $165,000 per year
    e. Benefits
        1. Money is invested pre-tax
        2. Money grows tax-free
    f. Take out at age 59 ½
        1. 10% penalty
    g. Taxed as income on withdrawal
    h. Rules
        1. Start early
            a. Example
                1. Save $2,000 per year for 10 years
                2. 8% return
                3. Start at age 25
                    a. At age 65, accumulate $314,870
                4. Start at age 35
                    a. At age 65, accumulate $145,845
        2. Use a tax-deferred vehicle
            a. Why to use an IRA/401K
                1. $2,000 one-time contribution
                2. 8% return
                3. 15% tax bracket
                4. Example
                    a. In IRA: $2,000 * $1.08^{35} = \$29,570$
                    b. Outside IRA: $1,700 * $1.068^{35} = ?$

d. Stocks and bonds
    1. Example
        a. Stocks
            1. 8% - 10%
        b. Bonds
            1. 5% - 6%
2. Target date funds
    a. Manage stock bond allocation
    b. Moving to bonds as retirement nears
        1. One is not a hedge fund
            a. No market timing
            b. No stock picking
                1. Use index funds
            c. Do not use actively managed funds
            d. Pay attention to fees
                1. Annual management fee is < 1%

2. Example
    a. Vanguard S&P has 0.3% fee

e. Asymmetrical information
    1. Either the buyer or seller has private information about the good
    2. Examples
        a. Used cars
        b. Health insurance
    3. Key problems
        a. Moral hazard
            1. A person that is imperfectly monitored may engage in undesirable behavior
                a. Shrinking
                    1. "Too-big-to-fail" banks
                        a. Taking excessive risks due to government guarantee
        b. Adverse selection
            1. If a good has unobservable properties, the mix of un-observables for market participants may be different than in the general population
            2. Examples
                a. Dental insurance
                b. Pooled mortgage security
                c. Market for used cars
                    1. Market for lemons
                    2. Example
                        a. Good car ($20,000 value and 50% probability)
                        b. Bad car($10,000 value and 50% probability)
                        c. Expected value is (0.5 * $20,000) + (0.5 * $10,000) = $15,000
                        d. The percentage of bad cars on the market is > 50%
                        e. Expected value is < $15,000
    4. Asymmetrical information causes market failure
        a. Owners of good cars cannot sell for the value of the car
        b. People with unhealthy teeth cannot afford to buy dental insurance
    5. Fixes
        a. Signaling
            1. More-informed party tries to communicate to less-informed party
                a. Examples
                    1. Car inspections
                    2. Education
        b. Screening
            1. Less-informed party incentivizes more-informed party to provide information
            2. Example

	A	B
Deductable	$100	$1,000
	Covers all expenses > $100	Covers all expenses > $1,000
	Attracts unhealthy people	Attracts healthy people

                a. Low-deductable insurance policies identify high claim population