Economics 101  
Professor Wallace  
Fall 2003

Final Exam Review

The following is a list of things that you will be expected to know for the final exam. It may not be comprehensive, but it is pretty close.

Monopoly
- Characteristics of a monopolistic industry
- Profit maximizing condition
- Understand the monopoly picture
- You should be able to determine the optimal price and optimal level of output given a linear demand curve, a linear cost curve (or marginal cost). You should also be able to compute profits, consumer surplus, producer surplus and DWL.
- Rent seeking equilibrium.
- Understand two ways to regulate a monopoly and the pluses and minuses of both in terms of efficiency and practicality.
  - Marginal cost regulation
  - Average cost regulation.

Price Discrimination
- Perfect price discrimination
- Quantity discrimination
- Multi-market discrimination.

Monopolistic Competition
- Characteristics of a monopolistically competitive industry.
- Profit maximizing condition.
- You should be able to determine the optimal price and optimal level of output given a linear demand curve, a linear cost curve (or marginal cost). You should also be able to compute profits, consumer surplus, producer surplus and DWL.
- How firms go about determining output levels and prices (understand the picture)
- Short-run equilibrium
- Long-run equilibrium
- Implications for welfare and efficiency.

* The list only covers topics after the second midterm exam. If you desire a review sheet for the entire course simply staple this review sheet to the review sheets for the first and second midterm exams.
Game Theory

- What constitutes a game (i.e. rules, strategies and payoffs).
- Nash equilibrium
  - How is it defined
  - How to find pure strategy Nash Equilibrium given a payoff matrix.
  - Dominant strategy Nash Equilibrium and how they differ from other Nash Equilibrium
  - Pure strategy Nash Equilibrium and how they differ from other Nash Equilibrium.

Oligopoly

- Characteristics of an oligopolistic industry.
- Firms can compete or collude by forming cartels.
- Understand the factors that make it more likely that firms will collude.
- Understand things that can be done to assist firms in maintaining cartels.

Duopoly and Impute Markets

- Understand both formulations of the firm problem
  - First approach
    - Find the cost function by choosing $K, L$ so as to minimize
      \[ cost = w \cdot L + r \cdot K \] subject to $Q = F(K, L)$. This gives you the cost function $C(Q)$.
    - Then choose $Q$ so as to maximize $\pi = P \cdot Q - C(Q)$
  - Choose $K, L$ so as to maximize $\pi = p \cdot F(K, L) - w \cdot L - r \cdot K$.
  - Know that the two methods are equivalent in the sense that the lead to the same level of output being produced.

- Labor Markets
  - Understand how individual and aggregate labor supply curves are derived.
  - Understand what factors shift labor supply.
  - Understand how individual firm and aggregate labor demand curves are derived.
  - Understand what factors shift demand for labor.
  - Understand how equilibrium in the labor market is determined.

- Capital Markets
  - Understand the connection between physical and financial capital - the price or rate of return on financial capital represents either part of the implicit opportunity cost or part of the direct cost of investments in physical capital.
  - Understand how firms go about making decisions about whether to invest in physical capital.
  - Understand what factors change demand for capital.
  - Understand what factors change the supply of capital.
  - Understand how equilibrium in the capital market is determined.
• Natural Resource Markets
  o Renewable Resources (Land)
    ▪ Understand the shape of the supply curve - we can think about it as being perfectly inelastic for high prices.
    ▪ Understand that price determination is largely determined by demand.
  o Nonrenewable Resources
    ▪ The shape of the supply curve - it is perfectly elastic at the present value of the expected future price.
    ▪ Understand that quantity determination is largely determined by supply.

Public Goods
• What is a public good and what are its properties?
  o Non-exclusivity – what does this mean?
  o Non-rival – what does this mean?
• The free rider problem – what is it and how does it affect the provision of public goods.
• Why public goods are underprovided for in a competitive market?
• Strategies that can be pursued to solve a public goods problem.
  o Social pressure
  o Mergers
  o Government
  o Mandates

Externalities
• Understand what an externality is.
• Understand that the socially optimum quantity of a particular good is the quantity such that marginal social cost intersects the demand curve and that marginal social cost is not private marginal cost because of the marginal externality cost.
• Understand that in the presence of externalities a competitive market fails to allocate resources efficiently and why
  o There is too much of the good associated with the negative externality created.
  o There is too little of the good associated with the positive externality created.
• What can the government do to make sure the efficient quantity of a good associated with a negative externality is produced?
  o Emissions Quotas - restrictions on how much of the good or a negative externality can be produced.
  o Emission Fees - taxes on the amount of output or negative externality produced.
  o Emission Permits - permits that allow firms to produce a certain amount of a negative externality
• Know the pluses and minuses of emission quotas, fees and permits and understand how they work.