Key Concepts- Spring 2024 (Midterm)

February 21, 2024

This list is provided to guide your studying. It is not absolutely exhaustive, but I have tried to include everything I think is key. Please let me know if there is a concept that I have covered in class that does not appear here. Either I will include it or tell you that it is not an important concept to study for the exam. Where appropriate, you should be able to solve problems analytically and demonstrate the concepts graphically.

- Construct the budget line/set.

- Understand and demonstrate how changes in prices and income affect the budget line (set).

- Construct the budget and understand how it changes under more advanced scenarios such as taxes, quantity discounts, etc.

- Understand what a preference relation is and how to use it to represent preferences.

- Understand the properties that preferences can have such as reflexivity, completeness, monotonicity, transitivity, convexity.

- Know what properties are needed to construct a utility function and how a utility function can be used to *represent* preferences.

- Understand what indifference curves represent and how they can be used to "graph" consumer preferences.

- Construct indifference curves from a utility function or description of preferences. Understand how the properties of a preference relation translate into different shapes of indifference curves.

- Know the classical utility functions: perfect compliments, perfect substitutes, quasi-linear and Cobb Douglass and what kind of preferences they represent.

- Understand the concepts of marginal utility and marginal rates of substitution [MRS] as well as how to find these form a utility function and what they mean.

- Be able to solve choice problems by maximizing utility to find demand under a variety of scenarios.

- Understand both the mathematics and the intuition for why and when the MRS being equal to the ratio of prices is necessary for a utility maximizing bundle except in the case of a "boundary" solution (like in perfect substitutes) or non-smooth preferences where the MRS does not exist (like in perfect complements).

- Draw inverse demand graphs and Engel curves.

- Understand properties of demand such as whether goods are normal, inferior, ordinary, Giffen, compliments, substitutes, etc.

- Understand Slutsky decomposition and know how to decompose changes in demand into substitution and income effects.

- Understand how to solve choice problems, find demand and it's properties when income is not in terms of money, but endowments of goods.

- Understand the situations when we can say that a consumer remains a net-buyer/seller of a good under certain price changes and is better off than before the price change.

- Solve intertemporal choice problems (consumption today, consumption tomorrow). Be able to work with (and graph) the budget equation and transform between present and future value.

- Understand the situations when we can say that a consumer remains a borrower/lender under interest rate changes and is better off than before the interest rate change.

- Know the definition of homothetic preferences and how to check that homothetic preferences are homothetic using the MRS.

- Add up individual demand functions to find "market" demand functions.

- Use the representative consumer property, when appropriate, to find market demand using aggregate income.

- Calculate income, price, and cross price elasticities for individuals and the market. Understand their meaning of elasticities and be able to interpret the magnitudes.

- Be able to classify demand into elastic, inelastic, and unit-elastic, and understand the meaning of each term.