

**Lecture 1: January 3, 2018**

*Lecturer: Jean Guillaume Forand*

*Notes By: Harsh Mistry*

## **1.1 Admin Info**

Jean Guillaume Forand HH 131  
Office Hours : Tuesday 3:30 - 5:00  
Midterm 1 (Jan 31st) - 20 %  
Midterm 2 - 20 %  
Final - 50%  
Assignments - 10 %

### **1.1.1 Topics**

1. Consumer Choice
2. General Equilibrium
3. Welfare
4. Market Failure
  - Externality
  - Public goods

## **1.2 Consumer Choice**

- Econ 201 with calculus
- basic model of economic theory

Economics is the study of decision-making in social environments

- Classics : micro, macro
- Also : Family economics, economics of crime, etc
- Economists construct models : abstract representation
  - Build stylized version of reality (I.e market for cars)
  - Deduct logically necessary features of the model (I.e what determines the price of cars)
  - Test whether a model's predictions are consistent with empirical evidence.
- Economic models are mathematical

### 1.2.1 A unifying model of decision-making

1. A decision-maker
2. Possible outcome DM may face
3. Actions available to DM, which affect outcomes.
4. Preferences of DM over outcomes, which describe the motivations

Using Mathematics

1. A decision-maker
2. A set  $X$  of outcome
3. a set of actions on feasible choices  $B \subseteq X$
4. A function  $u : X \rightarrow \mathbb{R}$ , which assigns numbers  $u(x)$  to each  $x \in X$ , interpreted as DM's utility from  $x$

#### 1.2.1.1 Solution (Optimal Choice)

Choices by DM that lead to outcomes that best with her preferences Using mathematics, the optimal choice is  $x^\Delta \in X$  which solves :

$$\max_{x \in X} u(x) \text{ s.t. } x \in B$$