



BIRLA INSTITUTE OF TECHNOLOGY AND  
SCIENCE, Pilani

Hyderabad Campus  
**FIRST SEMESTER, 2022-  
2023**

## **Course Handout**

29/08/2022

In addition to part-I (General Handout for all courses appended to the timetable) this portion gives further specific details regarding the course

Course No. : **ECON F345**  
Course Title : **BEHAVIORAL ECONOMICS**  
Instructor-in-Charge : **Dushyant Kumar**  
Instructors : **Dushyant Kumar**

### **1. Scope and objective of the course:**

Behavioral economics focuses on incorporating insights from psychology with regard to human behavior to enrich the standard economic analysis. The main tools to arrive at these insights are lab as well as natural experiments. The central aim of these behavioral models is to improve the explanatory and predictive power of standard (neoclassical) economic theory. People might behave 'irrationally' (irrational as defined in standard economic theory), moreover in a systematic and predictive way, hence incorporating these 'irrationalities' is going to enrich the analysis of human behavior. In the last two decades or so, behavioral economics has established itself as a prominent subarea in economics. This course is aimed to provide an introduction and overview of behavioral economics. Our focus is going to be on behavioral decision theory. We will be covering topics such as heuristics and biases, decision making under uncertainty, prospect theory, reference dependence and, inter-temporal choice. Upon the successful completion of the course, the students will be able to understand how behavioral economics builds on traditional economic models and psychology. They will be able to better understand and appreciate the real-life phenomenon such as saving decisions, overconfidence, rule of thumb, sub-optimal consumer choice, time inconsistency etc. They will be able to demonstrate knowledge of some of the main theoretical and empirical findings, and apply the main concepts from this field to a variety of contexts.

The course is an introductory course. Familiarity with Microeconomics (ECON F242) will be helpful although it is not a prerequisite. We will be primarily discussing decision making under both certainty and uncertainty using basic mathematics, statistics and logic.

### **2. Text Book (TB):**

Sanjit Dhami: *The Foundations of Behavioural Economic Analysis: Volume I: Behavioural Economics of Risk, Uncertainty, and Ambiguity*, Oxford University Press, 2019.

### **3. Reference Book:**

- R1.** Erik Angner: *A Course in Behavioral Economics*, Palgrave macmillan education, Second edition, 2016.
- R2.** Edward Cartwright: *Behavioral Economics*, Routledge Taylor & Francis Group, 2014.
- R3:** Colin Camerer, *Behavioral Game Theory: Experiments on Strategic Interaction*, Princeton, 2003
- R4:** Charles A. Holt (2019): *Markets, Games, and Strategic Behavior: An Introduction to Experimental Economics*, Princeton University Press.



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### 4. Course Plan:

Lecture No.	Learning Objectives	Topics to be covered	Chapter in the Text Book
<b>Module 1: Introduction to Behavioral Economics</b>			
1-2	Overview of the Behavioral Economics	Introduction: Scope and Coverage, Examples, Origin, Role of Experiments, Replication Issues, Theoretical Foundations	Introduction (TB), Chapter 1 (R1), Section 5 (TB), notes
<b>Module 2: Decision Making under Certainty &amp; Uncertainty</b>			
3-5	Introduction to Decision-Making under Certainty	Self-regarding preferences, Welfare Maximisation, Consistency of Choices, Opportunity Costs and Sunk Costs- Relevance in Decision Making	Chapter 3 (R1), notes
6-7	Basic Behavioral Biases	Menu Dependence, Anchoring, Heuristics and Rules of the Thumb	Chapter 3 (R1), notes
8-10	Introduction to Probabilistic Judgment: Introduction, Heuristics and Biases	Conditional Probability, Risk Attitudes, Certainty Equivalent, Bayesian Updating, Base-Rate Neglect, Confirmatory Bias, Overconfidence	Chapter 4-5 (R1), notes
11- 14	Introduction to Decision Making under Uncertainty: Different Theories or Approaches	Maximin and Maximax Principle, Expected Value Approach, Expected Utility Theory: Axioms, Independence Axiom, Evidence of Violations, Sure-Thing Principle, Ambiguity Aversion	Chapter 1 (TB), Chapter 6-7 (R1), notes
<b>Module 3: Behavioral Models of Decision Making</b>			
15-17	Rank Dependent Utility (RDU) Theory	Attitudes to risk under RDU, Drawbacks	Chapter 2.3, notes
18-21	Introduction to Prospect Theory and Its Applications	Basic Formulation, Elicitation of Utility Functions and Probability Functions, Axiomatic Foundations, Limitations	Chapter 2 (TB), notes



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22-23	Introduction to Prominent Alternative Decision Theories	Regret Theory, Disappointment Aversion	Chapter 2 (TB), notes
24-26	Introduction to Various Applications of Behavioral Decision Theories and Evidences	The Endowment Effect and Exchange Asymmetries, Myopic Loss Aversion, Satisficing Behaviour	Chapter 3 (TB), notes
<b>Module 4: Behavioral Theory and Intertemporal Choice</b>			
27-31	Introduction to Behavioral Issues in the Case of Intertemporal Choice	Exponential Discounting, Hyperbolic Discounting, Quasi-hyperbolic Discounting, Procrastination, Delay-Speedup Asymmetry, Gain-Loss Asymmetry, Other Issues	Chapter 8-9 (R1), notes
<b>Module 5: Learning and Interactions</b>			
32-35	Accommodating New Information in the Decision-making and Associated Biases	Bayesian Updating, Confirmatory Bias, Law of Small Numbers- Gambler's Fallacy and Hot-Hand Fallacy, Information Cascading	Chapter 5 (R5), Notes
36-37	Strategic Interactions with Rational Players- Basics of Game Theory	Dominance, Nash Equilibrium, Subgame Perfect Nash Equilibrium	notes
38-41	Introduction to Behavioral Game Theory	Basic Theories and Experiments in the Analysis of Strategic Interaction, Beauty Contest Game and Applications, Level-K Models, Focal Points, Social Preferences and It's Implications on Equilibrium, Equilibrium Selection	Chapter 6 (R2), Chapter 1 (R3), Notes

## 5. Learning Outcomes:

### Module 1: Introduction to Behavioral Economics

The students will be introduced to the field of behavioral economics. They will get to know its applications, scope and relevance. We will overview some of the core concepts in this field.

### Module 2: Decision Making under Certainty & Uncertainty

The students will be introduced to basic decision-making approaches. They will learn and apply core concepts of opportunity costs, framing, anchoring, etc. They will also be going to cover basics of game theory namely the solution concepts of Nash equilibrium and subgame perfect Nash equilibrium. They will learn the core concepts related to probabilistic judgment, and associated heuristics and biases. They will also be going to cover basic theories of decision making under uncertainty like expected value theory and



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expected utility theory, they will learn the applications and implications of these theories as well as the weaknesses of these theories.

### Module 3: Behavioral Models of Decision Making

Building upon the standard expected utility theory, the students will learn the core behavioral decision theories, particularly the rank-dependent utility approach and the prospect theory approach. How does prospect theory help us better understand people's behavior, how does the issue of regret and disappointment affect our decision-making process; the students will be able to analyze all these issues after going through this module. In this module, the students will also learn about various applications of behavioral theoretical concepts. How does having different endowments affect our decision making, how does having different goals and reference points affect our decision making; how we treat gain and loss differently and what effect this has on market outcomes- the students will be able to analyze these issues in a systematic manner after going through this module.

### Module 4: Behavioral Theory and Inter-temporal Choice

For most of our decisions, the consequences are not instant. It is realized over time. How should we incorporate this time element in our decision making? How does people incorporate future payments and incomes in their considerations, what policy incentivizes people to save for the future properly? How does individual might behave inconsistently over time and what implications these behaviors have for the market? The students will be able to analyze all these issues after going through this module.

### Module 5: Learning and Interactions

People try to use new information to improve their decisions. How do people typically incorporate the new information? How sometime our decision can drastically depend on others' decisions- in a rational yet inefficient way? When individuals work as a group, the outcome is going to be interdependent. How do people typically coordinate with others, what are the ways to improve? The students will also be introduced to the basics of behavioral game theory.

## 6. Evaluation Scheme:

EC No.	Evaluation Component	Duration	Weights	Date & Time	Nature of Component
1	Midsem	90 min.	35	05/11 3.30 - 5.00PM	OB
2	Assignment (Reports- Presentation) and/or Problem Sets	--	15	To be announced	OB
3	Quizzes	--	15	To be announced	CB
4	Comprehensive Exam	180 min.	35	31/12 FN	CB

7. **Chamber Consultation hours:** to be announced in the class.

8. **Notices:** Notices would be displayed on the course **CMS** page.

## 9. Make-up policy

Make-up will be given only on Doctor's and Warden's recommendation and with prior permission of the Instructor-in-Charge/Instructor. Requests for make-up made by phone/sms or during/after the test/exam would NOT be entertained at all. The requests need to be made through official email only. If a student is



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representing the \_\_\_\_\_ Institute in a  
seminar/conference/sports event etc., they need to produce a valid proof of the same to apply for make-up.

#### **10. Academic Honesty and Integrity Policy:**

Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

**Instructor-in-Charge**  
**ECON F345**