Learning Outcomes-based Curriculum Framework

(LOCF) for Post-graduate Programme

Name of the Programme: M.A. Behavioural Economics & Data Science

(Syllabus effective from 2020 Admission)

University of Kerala

MA Behavioural Economics and Data Science

Seme ster	Paper Code	Title	Hours per semester	Instructor hours per week	ESA Hours	CA	ESA	Total
					Hours	CA	ESA	Total
I	BEDS-CC- 211	Micro Economic theory	110	6	3	25	75	100
	BEDS-CC- 212	Macro Economic theory	110	6	3	25	75	100
	BEDS-CC- 213	Quantitative Tools for Behavioural Economics	120	7	3	25	75	100
	BEDS-CC- 214	Principles of Cognitive Economics	110	6	3	25	75	100
II	BEDS-CC- 221	Foundations in Behavioural Micro-Economics	110	6	3	25	75	100
	BEDS-CC- 222	Foundations in Behavioural Macro-Economics	110	6	3	25	75	100
	BEDS-CC- 223	Foundations of Data Science	110	6	3	25	75	100
	BEDS-CC- 224	Basic Econometrics and Research Methodology	120	7	3	25	75	100
III	BEDS-CC- 231	Applied Behavioural Economics	120	7	3	25	75	100
	BEDS-CC- 232	Experimental Economics- Methods and Application	110	6	3	25	75	100
	BEDS-CC- 233	Game Theory	110	6	3	25	75	100
	BEDS-DSE- 234 or BEDS-DSE- 235	Advanced Econometrics Data Analytics for Business	110 110	6 6	3 3	25 25	75 75	100 100
IV	BEDS-CC- 241	Basics of Behavioural Finance	110	6	3	25	75	100
	BEDS-CC- 242	Behavioural Economics and Policy Design	110	6	3	25	75	100
	BEDS-CC- 243	Foundations of Data Analysis Using R and Python	120	7	3	25	75	100
	BEDS-DSE- 244 or BEDS-DSE- 245	Behaviour Economics and Public Health Behaviour Economics and Tourism	110 110	6 6	3 3	25 25	75 75	100 100
	BEDS-D- 225	Behavioural and Data Science						100

		Project /Internship						
		Viva Voce						100
		Total						1800

Programme Specific Outcomes (PSO) for M.A. Behavioural Economics & Data Science

PSO1 To equip students with Basic and advanced knowledge in economic theories, Behavioural Economics and Data Science

PSO2 To familiarise the students with various aspects of applied econometrics, data management & cognitive economics

PSO3 To make the students capable of addressing and solving the issues in the society and the economy by acquiring greater insight in the behaviour of economic agents and data management they have acquired

PSO 4 To create academic excellence through holistic education.

PSO 5 To develop right skills in students catering to the needs of the industry and policy makers

Terms used

OBE-Outcome Based Education **CC**= Core Course DSC-Discipline Specific Elective **GC**- Generic Course **CL**- Cognitive Level **RE**-Remember **Fa**- Familiarize **Un**- Understand **Ap**- Apply **An**- Analyse **Ev**-Evaluate **Cr**- Create **KC**- Knowledge Category **Fa**- Factual **Co**-Conceptual

Semester I

BEDS-CC- 211   MICRO ECONOMIC THEORY

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	Familiarise with various consumer theories and apply them to analyse and predict the behaviour ofindividuals	PSO1	Fa	Co	Assignment on Substitution effect, elasticity
CO2	Understands the concept of production and cost	PSO1	Un	Co	Assignment on theories of cost
CO3	Familiarise with different market structures – Perfect and imperfectly competitive	PSO1	Fa	Co	Seminar on different market structure
CO4	Understand about general equilibrium and concept of economic welfare.	PSO1	Un	Co	Seminar on general equilibrium
CO5	To have greater insight into market failure and related aspects	PSO1	An	Fa	Assignment on market failure

Course Content

Module 1: Consumer Theory

Laws of preference –Cardinal, ordinal and revealed preference - Budget constraints and consumer equilibrium-elasticity of demand- income and substitution effect- consumer surplus, modern demand theory

Module 2: Theory of Production and Costs

Goals of firm- Theory of production- concept and types production function- theory of cost- modern cost theory

Module 3: Theory of market

Competitive and non-competitive- supply of firms and industry- perfect competition- monopoly- price discrimination- Monopolistic/imperfect competition -Strategic interactions - Duopoly (Cournot and Bertrand- collusive and non-collusive models of oligopoly

Module 4: General Equilibrium and welfare

General and partial equilibrium- Walrasian general equilibrium- tatonnement process- graphical treatment of general equilibrium $2\times2\times2$ model- role of value judgement Pareto welfare economics- Arrow's impossibility theorem - the theory of second best – Scitovsky's double compensation criterion - Rawl's theory of justice- A.K Sen's social welfare function – equity efficiency trade-off.

Module 5 Market failure

Public goods and the free rider problem. Externalities. The Coase Theorem. Imperfect Competition. Asymmetric Information (Moral Hazard and Adverse Selection). Optimal Contracts: Incentives vs Risk

Basic Reading List

Robert H. Frank, 2014, Microeconomics and Behaviour (9th ed., McGraw-Hill).

Hal R. Varian, 2014, Intermediate Microeconomics (9th ed., Norton).

ASSESSMENT

25 % Continuous / Formative Assessment. 75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format

Time : 3 hours   **Maximum Marks : 75**

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks). Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions out of 5 in Section C to be answered in less than 1200 words (3*10= 30 marks)

BEDS-CC- 212: MACRO ECONOMIC THEORY

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	Familiarise with various schools of macroeconomic thoughts	PSO1	Fa	Co	Assignment on Classical & Keynesian models
CO2	Understands the concept of ISLM approach	PSO3	Un	Co	Seminar on IS LM approach
CO3	Understands the concept ofDemand & supply of money	PSO1	Cn	Co	Seminar on Demand & supply of money
CO4	To analyse the behavioural foundations of macro economics	PSO2	An	Co	Seminar on Consumption functions, Investment functions
CO5	To familiarise with open economy macro economics	PSO4	Fa	Fa	Assignment on Mundell-Fleming model- Fixed and Flexible Exchange Rate–the Impossible Trinity

Course Content

Module 1: Introduction

Competing schools of macroeconomic thought- Determination of output, employment and price level in Classical and Keynesian models

Module 2: ISLM approach

Neo-classical and Keynesian Synthesis- The ISLM model- Keynesian and Neo-Classical Version- Extensions of ISLM model with govt sector- Relative efficiency of fiscal and monetary policies- ISLM model with labour market and flexible prices- Three Sector Macro Model

Module 3: Demand and supply of money

Demand for money: Keynesian, Patinkin's real balance, Tobin, Baumol and Friedman approaches - Supply of money- Financial Intermediation- Mechanistic and behavioural model of money determination- money and credit multiplier-Money supply determination in an open economy- Asset market equilibrium – Fisher Effect-Disequilibrium money and Buffer stock models

Module: 4 Behavioural Foundations of Macro economics

Consumption function: Current Income Theories (views of Keynes, Kuznets's consumption puzzle, Drift hypothesis of Smithies and views of Duesenberry)- Fischer's Intertemporal Choice model- Normal Income Theories (views of Friedman and Modigliani and others)- Endogenous Income Theory – Robert Hall Random Walk Hypothesis- David Laibson Behavioural Hypothesis- Empirical Evidence

Investment function: Neo-classical theory of investment – MEC and Keynesian theory of investment - Cost of capital and MEC- Accelerator theory of investment (simple and flexible)- Capital Stock Adjustment Principle –Interaction of Accelerator and Multiplier – Profit theory of 38 investment- Financial theory of investment – Tobin's q ratio- Modigliani-Miller theory - Investment under Uncertainty, Asymmetric Information and Irreversible Investment.

Module 5: The Open Economy

Balance of payment and Keynesian analysis - Internal and External Equilibrium- Mundel-Fleming model- Fixed and Flexible Exchange Rate with Capital Mobility –the Impossible Trinity – effectiveness of fiscal and monetary police- fiscal sustainability and public debt

Basic Reading List

Gregory Mankiw, Macroeconomics, Ninth Edition (International Edition), Worth Publishers, 2016.

Olivier Blanchard and David Johnson, Macroeconomics, Sixth Edition (Global Edition), Pearson, 2012

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Model Question in OBE Format

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BEDS-CC- 213-QUANTITATIVE TOOLS FOR BEHAVIOUR ECONOMICS

Course Outcomes

CO	CO Statement	PSO	CL	KC	Assessment
CO1	Familiarise with averages, dispersion and probability distributions	PSO1	Fa	Co	Assignment on Averages,dispersion measures
CO2	Understands the concept of exponents, polynomials, functions, limits, continuity etc.	PSO3	Un	Co	Seminar on Functions & limits
CO3	Familiarise with optimisation – maxima and minima	PSO1	Fa	Co	Seminar on optimisation
CO4	To understand about linear algebra – vectors – matrix etc.	PSO2/PDO1	Un	Co	Seminar on vectors & metrics
CO5	To familiarise with vectors and quadratic forms	PSO4	Fa	Fa	Assignment on quadratic forms

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Course Content

Module 1: Basics – frequency distribution – measures of central tendency and dispersion – moments, skewness and kurtosis – numerical problems

Probability – concept of probability – discrete and continuous random variables – probability and cumulative distribution functions – joint probability and cumulative distribution functions – mathematical expectations and variance – concepts and theorems – moment generating and characteristic functions –Special probability distributions – binomial, poisson, exponential, normal, chi square, t and F distributions – central limit theorem.

Module 2:

Basics – exponents, polynomials, functions, limits, continuity, and derivatives – rules – partial derivatives – differential and total differential – integration – rules –economic applications.

Set theory – convex and concave sets and functions – local and global maximum and minimum.

Module 3:

Optimisation – maxima and minima – constrained – Lagrangian multiplier method – first and second order conditions – solving numerical problems.

Module 4:

Linear algebra – vectors – matrix – definition – types – relations and operations – trace, partitioned matrices – determinants – rank – properties – inverse – properties of inverse – solution to a system of linear equations – existence of uniqueness of solution – Cramer's rule – inversion method.

Module 5:

Characteristic roots and vectors – properties – quadratic forms – definiteness – distribution of quadratic function.

Basic Reading List

David P. Doane and Lori E. Seward: Applied Statistics in Business and Economics, Tata McGraw Hill.

Edward T. Dowling: Introduction to Mathematical Economics, Tata McGraw Hill.

Kultar Singh: Quantitative Social Research Methods, Sage.

 P.K.Viswanathan: Business Statistics: An Applied Orientation, Pearson.

G.Hadley: Linear Algebra, Narosa Publishing House.

A.C.Chiang: Fundamental Methods of Mathematical Economics, McGraw-Hill.

M.D.Intriligator: Mathematical Optimization and Economic Theory, Prentice Hall Inc. Chapters 5, 7 and 8 and Appendices A and B.

ASSESSMENT

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Model Question in OBE Format

Time : 3 hours   **Maximum Marks : 75**

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BEDS-CC- 214: PRINCIPLES OF COGNITIVE ECONOMICS

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	Familiarise with economics of psychology & behavioural mental economics	PSO1/PSO3	Fa	Co	Assignment on economics of psychology
CO2	Understands the concept of motivation & personality	PSO3	Un	Co	Seminar on motivation & personality
CO3	Familiarise with perception & condoning	PSO1	Fa	Co	Seminar on perception & condoning
CO4	To understand about information processing	PSO2	Un	Co	Seminar on information processing

CO5	To familiarise with expectation, emotions & well being	PSO4	Fa	Fa	Assignment on expectation, emotions & well being

Course Content

Module 1: Introduction

Shared interest of economics and psychology- relevance for psychology for economics-economic psychological models of behaviour-mental economics

Module 2: Motivation and personality

Motivation and personality in economic behaviour- need for achievement- locus of control-sensation seeking and risk attitude- altruism- time preference- cognitive style-life style

Module 3: Perception, learning and attitude

Perception-psychophysics- perceptual judgement- price perceptism- perception of money and inflation

Learning- classical conditionality-operand conditioning- conflict model buying behaviour-Attitude and utility- images

Module 4: Limited information processing

Information processing in consumer decision making- information processing capacity-heuristic in information processing- aspiration levels in information process- models of information processing

Module 5: Economic expectation, emotions and wellbeing

Economic expectation – buying intention- consumer confidence- relation between attitude and behaviour

Emotions and utility functions- emotion and consumer choice- subjective wellbeing-wellbeing and income- poverty, unemployment and consumer satisfaction.

Basic Reading List

Psychology in Economics and business, Gerrit Ando Antonides, Springer Science Business Media, 1991

Economic Psychology (ed) Rob Rinyard, Wiley, 2018, chapter 16

Additional Reading List

The Cambridge Handbook ofPsychology and EconomicBehaviour, Alan Lewis (Edt.), Cambridge University Press, 2008

Economics and PsychologyA Promising New CrossDisciplinary Field: Bruno S. Frey and Alois Stutzer (Edt.), CESifo Seminar Series, 2007

Psychological Economics: Development, Tension and Prospect, Peter E Earl (edt), Kluwer Academic Publishers, 1987

Psychologyand theEconomic MindCognitive Processes& Conceptualization, Robert L. Leahy, Springer Publishing Company, 2003

Philosophical Problems ofBehavioural Economics, Stefan Heidl, Routledge, 2016

New directions in Economic Philosophy, Theory, Experiment and Application: Stephan E.G and Others (edt), Edward Elgar, 1992

Handbook of Economic Philosophy, W. FRED VAN RAAIJ and others (edt),Springer-Science+Business Media, B.V, 1982

Social Psychology and Economics, David De Cremer, Marcel Zeelenberg and J. Keith Murnighan (edt), Psychology Press, 2012

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Semester II

BEDS-CC- 221: FOUNDATIONS IN BEHAVIOURAL MICRO-ECONOMICS

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	Familiarise with the discipline behavioural economics	PSO2/PSO1	Fa	Co	Assignment on economics various aspects of behavioural economics
CO2	Understands the concept preference, risk etc.	PSO3	Un	Co	Assignment on preference & risk
CO3	Familiarise with inter temporal choice	PSO1	Fa	Co	Seminar on perception & condoning
CO4	To understand about strategic interaction& behavioural game theory	PSO2	Un	Co	Seminar on Strategic interaction & behavioural games
CO5	To familiarise with nudges, policy & happiness	PSO 3	Fa	Fa	Assignment on nudges and related aspects

Course Content

Module 1: Introduction

What is behavioural economics? - History and evolution- relation with other disciplines- objectives, and scope- themes and methodology of behavioural economics (theory, evidence, consilience) – application

Module 2: Foundation

Values, preferences and choice- believes- heuristic and biases- state dependent preferences (such as habit formation and addiction)- mis-prediction and projection bias-anticipation and information avoidance-decision making under risk and uncertainty- prospect theory- the role of reference- dependent preference in both risky (loss aversion) and risk free (endowment) choices-mental accounting- applications

Module 3: Inter temporal choice

The discounted utility model (origin, features, methodology, anomalies with discounted utility models)- alternative inter temporal choice models (time preferences, time inconsistent preferences- hyperbolic discounting- modifying the instantaneous functions)- applications

Module 4: Strategic interaction

Behavioural game theory (nature, equilibrium, mixed strategies, bargaining, iterated games, signalling, learning)- application

Modelling of social preferences –nature and factors affecting social preferences-distributional social preferences based on altruism, inequality aversion models- reciprocity models, evidence and policy implications

Module 5: Nudges & Happiness

Nudges, Policy, and Happiness- the application

Basic Reading List

An introduction to behavioural economics by Wilkinson and Klaes, Palgrave McMillan

Behavioural Economics and Finance, by Michelle Beddeley, Rutledge, 2019

Additional Reading List

Behaviour economics and business ethics- interrelation and application by Alexander Rajko, Rutledge, London, 2012

Philosophical problems of behavioural economics by Steffan Heidel, Routlege, 1996

Varieties of modern economic rationality – from Adam Smith to Contemporary Behavioural and evolutionary economists by Michael S Zoubulakis, Routledge, 1997

Behavioural foundations of economics by J.L. Buxter, McMillan Press,

Choice, Behavioural economics and addiction, edited by Ruby E Vachinich and Nick Heather, Pergamon Elsevier, 2003,

Advance in understanding strategic behaviour- game theory experiments and bounded rationality, edited by Steffan Huck, Palgrave, McMillan, 2004

Loewenstein (1987) "Anticipation and the Valuation of Delayed Consumption". Economic Journal, 97(387): 666— 684.

Brunnermeier, Markus, K., and Jonathan A. Parker (2005). "Optimal Expectations." American Economic Review, 95(4): 1092-1118.

Kahneman and Tversky (1979) "Prospect Theory: An Analysis of Decision Under Risk", Econometrica, 47(2): 263– 291.

List (2003) "Does Market Experience Eliminate Market Anomalies?", Quarterly Journal of Economics, 118(1): 41– 71.

Koszegi and Rabin (2006), "A Model of Reference-Dependent Preferences", Quarterly Journal of Economics, 121(4): 1133–1165.

Sydnor, Justin. 2010. "(Over)insuring Modest Risks." American Economic Journal: Applied Economics, 2(4): 177-99

Charness and Rabin (2002) "Understanding Social Preferences with Simple Tests" Quarterly Journal of Economics, 117(3): 817–869.

Lazear, Edward P., Ulrike Malmendier, and Roberto A. Weber. 2012. "Sorting in Experiments with Application to Social Preferences." American Economic Journal: Applied Economics, 4(1): 136-63.

DellaVigna, List, Malmendier. 2012. "Testing for Altruism and Social Pressure in Charitable Giving". Quarterly Journal of Economics, 127(1): 1–56.

Rabin (1993) "Incorporating Fairness into Game Theory and Economics", American Economic Review, 83(5): 1281– 1302.

Fehr and Gachter, (2000),"Fairness and Retaliation: The Economics of Reciprocity", Journal of Economic Perspectives, 14(3): 159–181.

Fehr, E. and Schmidt, K. (1999) "A Theory of Fairness, Competition, and Cooperation" The Quarterly Journal of Economics, 114(3): 817—868.

Thaler, Richard H. 1988. "Anomalies: The Ultimatum Game." Journal of Economic Perspectives, 2(4): 195-206.

Tversky, A. and Kahneman, D. (1974) "Judgment Under Uncertainty: Heuristics and Biases", Science, 185(4): 1124– 1131.

ASSESSMENT

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BEDS-CC- 222: FOUNDATIONS IN BEHAVIOURAL MACRO-ECONOMICS

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	Familiarise with the discipline behavioural macro economics	PSO1	Fa	Co	Assignment on foundations of behavioural macro economics
CO2	Understands the new approaches to macro economic modelling	PSO3/PSO3	Un	Co	Assignment on new approaches to macro economic modelling
CO3	To understand about Inertia in macroeconomic variables and non-normality	PSO1	Fa	Co	Assignment on Inertia in macroeconomic variables and non-normality
CO4	To familiarise with transmission of shocks	PSO2	Un	Co	Seminar on Inertia in macroeconomic variables and non-normality
CO5	To familiarise with nudges, policy & happiness	PSO4

19 | Fa | Fa | Seminar on transmission of shocks |

Course Content

Module 1: Foundations of behavioural macro economics

Neo-Keynesian Rational Expectation model- role of rational expectation in business cycle and labour market equilibrium- the role of monetary policy and the determination of asset prices- Animal Spirits and economic decisions

Module 2: Need for new approach for macroeconomic modelling

The Canonical Dynamic Stochastic General Equilibrium model (DSGE)- recent development in DSGE model-financial market friction-problems with DSGE model- micro foundation based on utility maximisation- rational expectation and cognitive problems of agents-the assumption of representative agent- the exogenous business cycle model underlying DSGE model-empirical validation- need for new approach

Module 3: Basic behavioural model

Basic behavioural model – three reduced form equations- introducing heuristic in forecasting output-forecasting rules-heuristic and selection mechanism in forecasting inflation-defining animal spirit- result of basic macroeconomic model-stability analysis-chaos and output stabilisation

Module 4: Inertia in macroeconomic variables and non-normality in the output gap

Empirical evidence of serial correlation- empirical correlation in New Keynesian rational expectation models-serial correlation in behavioural macroeconomic model- the sources of autocorrelation and the long lag in behavioural macroeconomic model-factors affecting serial correlation in behavioural macroeconomic model-sensitivity analysis

Non-normality- empirical evidence-Non normality in DSGE models- Non normality in behavioural model- sensitivity analysis- extreme values of animal spirit under different parameters-correlation of output gap and animal spirit under different parameters- the power of output stabilisation

Module 5: Transmission of shocks

Demand, supply and interest rate shocks in New Keynesian Rational Expectation model- Demand, supply and interest rate shocks in behavioural model –factors affecting uncertainty about the transmission of shocks

<u>Basic Reading List</u>

Behavioural Macro Economics -Theory and Policy, Paul De Grauwe and Yeumei Ji, Oxford University Press, 2019

Additional Reading List

Ayala and A. Palacio-Vera (2014) "The Rational Expectations Hypothesis: An assessment from Popper's Philosophy", http://www.levyinstitute.org/pubs/wp_786.pdf

Muth, J.F. 1961. Rational Expectations and the Theory of Price Movements, Econometrica, 29(3), pp. 315-335. - S. Rebelo (2005) "Real Business Cycles Models: Past, Present and Future"

http://www.kellogg.northwestern.edu/faculty/rebelo/htm/rbc.pdf - R. Lucas (1995) "Monetary Neutrality", Nobel Price Lecture

https://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1995/lucas-lecture.pdf

A. Lo (2007) "Efficient Markets Hypothesis" in L. Blume and S. Durlauf, The New Palgrave: A Dictionary of Economics.

G. Akerlof, (2001), "Behavioral Macroeconomics and Macroeconomic Behavior", Nobel Prize Lecture.

G. Akerlof and R. Shiller, (2009), Animal Spirits, Princeton University Press.

Lucas, Robert E., Jr. and Thomas J. Sargent, "After Keynesian Macroeconomics," in Federal Reserve Bank of Boston,

After the Phillips Curve: Persistence of High Inflation and High Unemployment, Conference Series, 1979.

Farmer, R., Macroeconomics of Self Fulfilling Prophecies, MIT press.

Blanchard, Olivier J. and Mark W. Watson., 'Bubbles, Rational Expectations and Financial Markets', Crises in the Economic and Financial Structure, Paul Wachtel, editor, pp. 295-316. Lexington, MA: D.C. Heathand Company, (1982).

Akerlof, George and William T. Dickens and George L. Perry, "The Macroeconomics of Low Inflation," Brookings

Papers on Economic Activity, 1996:1, pp. 1–59.

Akerlof, George and William T. Dickens and George L. Perry, "Near-Rational Wage and Price Setting and the Long-Run Phillips Curve," ," Brookings Papers on Economic Activity, 2000.

Akerlof, G. and Janet L. Yellen, "A Near-rational Model of the Business Cycle, with Wage and Price Inertia,"

Quarterly Journal of Economics, 100 (Supp. 1985).

Akerlof, ,G. and Janet L. Yellen, "Can Small Deviations from Rationality Make Significant Differences in Economic

Eqilibria?", American Economic Review (1995).

Mankiw, N. Gregory, "Small Menu Costs and Large Business Cycles: A Macroeconomic Model", Quarterly Journal of Economics, 1985.

Pagel, Michaela, "Expectations-Based Reference-Dependent Life-Cycle Consumption", Review of Economic Studies (forthcoming).

Laibson D., "Golden Eggs and Hyperbolic Discounting", Quarterly Journal of Economics, 1997;112(2):443-477.

Akerlof, George, "Procrastination and Obedience", American Economic Review, Papers and Proceedings 81, (1991).

Labison, David, Andrea Repetto, and Jeremy Tobacman, "Self-Control and Saving for

ASSESSMENT

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BEDS-CC- 223: FOUNDATIONS OF DATA SCIENCE

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	Familiarise with the area of Data Science	PSO2	Fa	Co	Assignment on Basics of data science
CO2	Understands about data processing	PSO3	Un	Co	Seminar on data processing
CO3	Familiarisewith machine learning	PSO1	Fa	Co	Assignment on machine learning
CO4	To understand about clustering	PSO2	Un	Co	Seminar on clustering
CO5	To familiarize with Data Visualization	PSO4	Fa	Fa	Assignment on data visualization

Course Content

Module 1: Introduction

What is Data Science? Big Data and Data Science – Datafication - Current landscape of perspectives - Skill sets needed; Matrices - Matrices to represent relations between data, and necessary linear algebraic operations on matrices -Approximately representing matrices by decompositions (SVD and PCA); Statistics: Descriptive Statistics: distributions and probability - Statistical Inference: Populations and samples - Statistical modelling - probability distributions - fitting a model - Hypothesis Testing -

Module 2: Data Processing

Data pre-processing: Data cleaning - data integration - Data Reduction Data Transformation and Data Discretization. Evaluation of classification methods – Confusion matrix, Students T-tests and ROC curves-Exploratory Data Analysis - Basic tools (plots, graphs and summary statistics) of EDA, Philosophy of EDA - The Data Science Process.

Module 3: Machine Learning

Basic Machine Learning Algorithms: Association Rule mining - Linear Regression- Logistic Regression - Classifiers - k-Nearest Neighbours (k-NN), k-means -Decision tree - Naive Bayes- Ensemble Methods - Random Forest. Feature Generation and Feature Selection - Feature Selection algorithms - Filters; Wrappers; Decision Trees; Random Forests.

Module 4: Clustering

Clustering: Choosing distance metrics - Different clustering approaches - hierarchical agglomerative clustering, k-means (Lloyd's algorithm), - DBSCAN - Relative merits of each method - clustering tendency and quality.

Module 5: Data Visualization

Data Visualization: Basic principles, ideas and tools for data visualization.

Basic Reading List

Cathy O'Neil and Rachel Schutt, "Doing Data Science, Straight Talk from The Frontline", O'Reilly, 2014.

Jiawei Han, Micheline Kamber and Jian Pei, "Data Mining: Concepts and Techniques", Third Edition. ISBN 0123814790, 2011.

Mohammed J. Zaki and Wagner Miera Jr, "Data Mining and Analysis: Fundamental Concepts and Algorithms", Cambridge University Press, 2014.

Matt Harrison, "Learning the Pandas Library: Python Tools for Data Munging, Analysis, and Visualization , O'Reilly, 2016.

Joel Grus, "Data Science from Scratch: First Principles with Python", O'Reilly Media, 2015.

Wes McKinney, "Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython", O'Reilly Media, 2012.

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BEDS-CC- 224: BASIC ECONOMETRICS AND RESEARCH METHODOLOGY

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	To create an understanding among the students on basic econometric methodology	PSO1	Fa	Co	Assignment on basic concepts of econometrics
CO2	To train the students in applying economic theories to real economic data by means of empirical models,	PSO3	Un	Co	Seminar on Auto-correlation, Heteroscedasticity,
CO3	To train the students in applying economic theories to real economic data by means of empirical models	PSO1/PSO2	Fa	Co	Assignment on Dummy Variable Technique and its Applications
CO4	To Familiarize about time series data	PSO2	Un	Co	Seminar on Stationarity and Non-Stationarity
CO5	To have basic understanding about research methodology	PSO4	Fa	Fa	Seminar on social science

Course Content

Module I: Introduction to Econometrics

Meaning, scope and methodology of Econometrics - Sample Regression Function and Population Regression Function - Simple linear Regression Model – Assumptions, Estimation through Ordinary Least Squares (OLS) Approach - Gauss Markov Theorem – Multiple Regression Model - Testing the Significance of Regression – t, Analysis of variance (ANOVA), F and the concept of R^2 and adjusted R^2

Module II: Violation of the CLRM Assumptions

Auto-correlation, Heteroscedasticity, Multicollinearity, Specification Errors, Errors of Measurement - Nature, Consequences, Tests and Remedial measures.

Module III: Dummy Variables Regression Models

Dummy Variable Technique and its Applications - Comparing two regressions, interaction effects, seasonal analysis, piece-wise linear regression.

Module IV: Introduction to Time series Econometrics

Basic Concepts: Stationarity and Non-Stationarity – Random Walk Models – Testing Stationarity - Unit Root- Integrated Process - Basic Concepts of ARMA and ARIMA Process.

Module V: Introduction to Research Methodology

Meaning, purpose and scope of Social Science Research - Types of Research - Stages of Research Process - Formulation of research problem, Research Design Setting, Theoretical Frame, Review of Literature, Objectives and Hypothesis, Methods of Data Collection, Analysis of Data, Hypothesis Testing and drawing conclusions, Report Writing and Lay out of the Research Report. – introducing computer software for data analysis- excel, SPSS and Gretl

Basic Reading List

Gujarathi , D.&Sangeetha, N. (2007). Basic Econometrics (4thed) New Delhi: McGraw

Hill

Koutsoyianis, A. (1977). Theory of Econometrics (2nded). London .The Macmillian Press

Ltd.

Kothari, C. R. (2004). Research Methodology Methods & Techniques, New Age

International Publishers, Delhi.

Gerald Guthrie(2012),Basic Research Methods, Sage, New Delhi.

Majumdar, P.K. (2011), Research Methods in Social Sciences, Viva Books, New Delh

Rowena Murray(2010), How to Write a Thesis, Tata McGraw Hill, New Delhi.

Additional Reading List

Cochran, W. G. (1999).Sampling Techniques, John Wiley & Sons (Asia) Ltd.

Greene W. H. (1997). Econometric Analysis, New Delhi, Pearson.

Johnston J. (1991).Econometric Methods, NewYork, McGraw Hill.

Intriligator M. D. (1991) Econometric Methods, Techniques and Applications, Prentice

Hall, Englewood Cliffs, New Jersey.

ASSESSMENT

25 % Continuous / Formative Assessment (see PG Regulations). 75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format

Time : 3 hours   **Maximum Marks : 75**

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks) Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions in Section C to be answered in less than 1200 words (3*10= 30 marks)

Semester III

BEDS-CC- 231   APPLIED BEHAVIOURAL ECONOMICS

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	To conceptualising welfare and measuring welfare	PSO1	Fa	Co	Assignment on various measurements of welfare
CO2	To familiarize with behaviour economics and development economics	PSO3	Un	Co	Seminar on behaviour economics and development economics
CO3	To understand about behavioural economics & labour market	PSO1/PSO2	Fa	Co	Assignment on behavioural economics & labour market
CO4	To Familiarize about behavioural economics and health economics	PSO2	Un	Co	Seminar on behavioural economics and health economics
CO5	To have basic understanding behavioural economics and organisational behaviour	PSO4	Fa	Fa	Seminar behavioural economics and organisational behaviour

Course Content

Module 1: Conceptualising Welfare

Behaviour economics on Welfare and Policy Analysis Conceptualising and measuring welfare- saving, addiction and public good

Module 2: Behavioural Economics and Development Eeconomics

Immediate barriers in education- demand for commitment – default settlement and savings-default setting and financial institution- Status Quo Bias and Diffusion of Innovations- Self Serving Bias and Evaluation

Module 3: Behaviour economics and labour market

Wage rigidityFairness, reciprocity and wage rigidity- evidence from surveys by economists- evidence from surveys from experimental economists- evidence from organisational psychology and managerial science

Module 4:Behavioural economics and health economics

Introduction and background- models of physician behaviour- health care demand and insurance

Module 5:Behavioural economics and organisational behaviour

Complicating the single-agent risk-incentive model- workers as members of multi-agent firms- top managers and corporate finance- organisational reactions: sorting, repairs and exploitation.

Basic Reading List

Introduction to Behavioral Economics and Its Applications- Peter Diamond and Hannu Vartiainen (ed.), Princeton University Press, 2012

Handbook of Behavioral Economics-Foundations and Applications - BD Bernheim, S DellaVigna, D Laibson(ed), North Holland ,2019

The foundations of behavioural economics –Sanjit Dhami, Oxford, 2020

Applied Behavioral Economics Research and Trends, Rodica Ianole, IGI Global, 2016

ASSESSMENT

25 % Continuous / Formative Assessment (see PG Regulations).   75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format

Time : 3 hours   Maximum Marks : 75

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks) Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions in Section C to be answered in less than 1200 words (3*10= 30 marks)

BEDS-CC- 232: EXPERIMENTAL ECONOMICS: METHODS AND APPLICATION

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	To familiarize with history and emergence of experiments in economics	PSO1	Fa	Co	Assignment on emergence of experiments in economics
CO2	To understand Need for experiments in economics	PSO3	Un	Co	Seminar on Need for experiments in economics
CO3	To understand how to design an experiment	PSO1	Fa	Co	Assignment on how to design an experiment
CO4	To familiarize with econometrics of experimental data	PSO2	Un	Co	Seminar on econometrics of experimental data
CO5	To understand the external validity of an experiment	PSO4	Fa	Fa	Seminar on external validity of an experiment

Course Content

Module 1:Introduction

History and emergence of experiments in economics- end of impossibility- choice consistency in risky decision- experimental economics and behaviour- experimental economics today- experimental methods – advantages and limitation-type of experiments-procedure and design consideration

Laboratory experiment- an overview- procedure for experiments- role of experimenter- experiment auction- ex-ante and ex-post method- case study

Module 2: Need for experiments in economics

Controlled experiment in empirical economics-Econometric approach to data analysis-content of observational data- treatment-effect parameters- identification based on observational data- inference based on controlled experiments- experimental methods for economic science- theory and reality- case study

Module 3: Designing an experiment

Internal validity issues- link between experiment and internal validity- incentive structure of experiment- parameters and experimental treatment- the pursued experiment- pursued opponent and learning - Conducting an experiment- setting up an experimental laboratory- step by proceeding

Module 4: Econometrics of experimental data

Experimental data-estimation and inferences-testing procedures-case study

Module 5: External validity of experiment

The external validity of the experimental result- testing of external validity- testing theory – case study

Experimental Economics Lab

Basic Reading List

Experimental Economics: Method and Application by Nicholas Jacquemet and Oliver L'Haridon, Cambridge University Press, 2019

Additional reading list

Papers in experimental economics by Vernon L Smith, Cambridge University Press, 1991

Experimental Economics, Douglas Davis, Charles A Holt, Princeton University Press, 1993

Experimental Auctions- methods and applications in Economics and Marketing research, Jaison L Lusk and Jason F Shogren, Cambridge University Press, 2007

The methodology of experimental economics, Franciso Guala, Cambridge University Press, 2005

Economics Lab-an intensive course in experimental economics, Daniel Friedman and Alexssandra Cassar, Routledge, 2004

Kagel, John and Alvin Roth. The Handbook of Experimental Economics. Princeton University Press, 1995.

Friedman, Daniel and Shyam Sunder. Experimental Methods: A Primer for Economists. Cambridge University Press, 1994

Camerer, Colin. Behavioral Game Theory: Experiments in Strategic Interaction. Princeton University Press, 2002.

Bardsley, Nicholas, Robin Cubitt, Graham Loomes, Peter Moffatt, Chris Starmer, and Robert Sugden. Experimental Economics: Rethinking the Rules. Princeton University Press, 2009.

ASSESSMENT

25 % Continuous / Formative Assessment (see PG Regulations).   75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format

Time : 3 hours   Maximum Marks : 75

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks) Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions in Section C to be answered in less than 1200 words (3*10= 30 marks)

BEDS-CC- 233   GAME THEORY

Course Outcomes Content

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	To familiarize the concept of theory of games	PSO1	Fa	Co	Assignment on concept of theory of games
CO2	To understand about strategic games & Nash equilibrium	PSO3	Un	Co	Seminar on strategic games & Nash equilibrium
CO3	To understand about the illustrations of Nash Equilibrium	PSO1	Fa	Co	Assignment on illustrations of Nash Equilibrium
CO4	To Familiarize with mixed Strategy Nash Equilibrium	PSO2	Un	Co	Seminar on mixed Strategy Nash Equilibrium
CO5	To understand about extensive Games and Nash Equilibrium	PSO4/PSO3	Fa	Fa	Seminar on extensive Games and Nash Equilibrium

Course Content

Module 1: Introduction

What is game theory? -Theory of rational choice -interacting decision makers

Module 2: Strategic Games and Nash Equilibrium

Strategic games- examples Nash equilibrium- concept and examples- Best response functions --Dominated Actions -Symmetric games and symmetric equilibria

Module 3: Illustrations of Nash Equilibrium

Cournot's model of duopoly market- Bertrand's model of duopoly -market -Electoral Competition War of Attrition -Auctions -Accident Laws

Module 4: Mixed Strategy Nash Equilibrium

Introduction -Strategic games with randomisation -Mixed strategy Nash equilibrium: concept and examples- Dominated Actions -Formation of Players' beliefs

Module 5: Extensive Games and Nash Equilibrium

 Introduction to extensive games -Strategies and outcomes -Nash equilibrium- Subgame perfect Nash equilibrium- Backward induction

Illustrations of Extensive Games and Nash Equilibrium- Stackelberg model of duopoly markets --Ultimatum game

Basic Reading List

Osborne, M.J.An Introduction to Game Theory, Oxford University Press, 2004

 Mas-Colell,A., M.D. Whinston and J.R. Green Microeconomic Theory, Oxford University Press, 1995

Gibbons, R.A Primer in Game Theory,Pearson Education, 1992

A course in Game Theory, Martin J Osborne Ariel Rubinstein, The MT Press,1998

Game Theory, Drew Fundenberg and Jean Tirole, MIT Press

Game Theory and Economic Analysis, Christian Schmidt (Edt), Rutledge,2002

Evolution, Games and Economic Behaviour, Fernando Vega-Redondo, Oxford University Press,1996

ASSESSMENT

25 % Continuous / Formative Assessment (see PG Regulations). 75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format

Time : 3 hours   **Maximum Marks : 75**

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks) Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions in Section C to be answered in less than 1200 words (3*10= 30 marks)

BEDS-DSE- 234: OPTIONAL -ADVANCED ECONOMETRICS

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	To develop analytical skills needed to work successfully with real economic data	PSO1	Fa	Co	Assignment ondynamic econometric models
CO2	To understand about of simultaneous equation models	PSO3	Un	Co	Seminar on simultaneous equation models
CO3	To understand about to non-stationary Time Series	PSO1	Un	Co	Assignment on tonon-stationary Time Series
CO4	To familiarize with Time Series Econometrics: Forecasting	PSO2	Fa	Co	Seminar on Time Series Econometrics: Forecasting
CO5	To understand about panel data models	PSO4	Un	Fa	Seminar onpanel data models

Course Content

Module I: Dynamic Econometric Models

Autoregressive and Distributed Lag Models -Koyck Model, Nerlove's Partial Adjustment Model, Cagan's Adaptive Expectations Model - Instrumental Variables – Detecting Autocorrelation in Autoregressive models - Almon's Approach to Distributed Lag Models.

Module II: Estimation of Simultaneous Equation Models

Simultaneous Equation Models - Structural and Reduced form Equations, Simultaneous Equation Bias, Instrumental Variable Estimation - Identification Problem, The Rank and Order Condition, Methods of estimating simultaneous equation system, Recursive methods and OLS - Indirect Least Squares, 2SLS, 3SLS, FIML estimation techniques - Durbin – Wu – Hausman Test.

Module III: Introduction to Non-Stationary Time Series

Stationarity and Non stationarity - Stationary time series and Non stationary time series Deterministic Trend- Difference Stationary and Trend-Stationary - Spurious Regressions – Tests of Non stationarity - Graphical Tests & Augmented Dickey-Fuller tests - Cointegration& Error Correction Model (ECM).

Module: IV Time Series Econometrics: Forecasting

AR, MA and ARIMA Modelling of Time Series Data - The Box- Jenkins (BJ Methodology - Vector Auto Regressive (VAR) and Causality - Measuring Volatility – The ARCH and GARCH Model

Module V: Introduction to Panel Data Models

Panel Data Set – Example to investigate dynamics - Fixed Effects Regressions – Within groups fixed effects, First differences fixed effects - Random Effects Regressions - Assessing the appropriateness of fixed effects and random effects estimation.

Basic Reading List

Dougherty, Christopher (2011).Introduction to Econometrics, Oxford University Press,

Newyork.

 Gujarathi, D, &Sangeetha, N. (2007). Basic Econometrics (4thed) New Delhi: McGraw

Hill

Woolridge, J. M. (2007). Introductory Econometrics: A Modern Approach (3rded.). New

Delhi: Akash Press.

Additional Reading List

Amemiya, T.(1995).Advanced Econometrics, Harvard University Press.

Baltagi, B. H. (1998). Econometric Analysis of Panel Data, New York: Springer.

Enders, Walter (2014). Applied Econometric Time series (4th edition) Wiley E-Text

Student Package

Goldberger, A. S. (1998). Introductory Econometrics, Harvard University Press

Cambridge Mass

Greene, W. H. (1997). Econometric Analysis, New Delhi, Pearson.

Johnston, J. (1991).Econometric Methods, NewYork, McGraw Hill.

Kennedy, I. (1998). A Guide to Econometrics (4th edition) MLT Press, NewYork

Kmenta, J. (1997).Elements of Econometrics (Reprint Edition), University of Michigan

Press, Newyork.

Krishna, K. L. (ed) (1997). Econometric Application in India, Oxford University Press,

New Delhi

Maddala (ed) 1993. Econometric Methods and Application Aldershot, U K

Pindyck andRubinfield (1976) Econometric Models and Economic Forecasts, McGraw

Hill Kogakus Tokyo

ASSESSMENT

25 % Continuous / Formative Assessment (see PG Regulations).   75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format

Time : 3 hours   Maximum Marks : 75

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks) Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions in Section C to be answered in less than 1200 words (3*10= 30 marks)

BEDS-DSE- 235: Optional-Data Analytics for Business

Course Content

Module 1: Data analytic thinking and learning methods

Ubiquities of data opportunities- data science- Big data processing-data mining

Supervised versus unsupervised methods-data mining process-business understanding- data understanding -data preparation-modelling- evaluation- regression techniques- machine learning and data mining -

Predictive learning- Models, induction and prediction- supervised segmentation- visualising segmentation- trees as a set of rule- probability estimation

Module 2: Fitting a model to data

Classification versus mathematical function- linear discriminant function- optimising an objective   function-linear discriminant function for ranking and scoring- regression via

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	To familiarize data analytic thinking and learning methods	PSO1	Fa	Co	Assignment ondata analytic thinking and learning methods
CO2	To understand about fitting a model to data	PSO3/5	Un	Co	Seminar on fitting a model to data
CO3	To understand about similarity-neighbours, clusters and visualising model performance	PSO1/5	Un	Co	Assignment onvisualising model performance
CO4	To familiarize with evidence and probabilities	PSO2/5	Fa	Co	Seminar onevidence and probabilities
CO5	To understand with representing and mining text	PSO4/5	Un	Fa	Seminar on representing and mining text

mathematical function-class probability estimation and logistic regression- nonlinear function-support vector machine and neural network

Over fitting and its avoidance -Fundamental concepts-generalisation, fitting and over fitting- complexity control- exemplary techniques-cross validation-attribute selection- tree pruning-regularisation

Module 3: Similarity- neighbours, clusters and visualising model performance

Nearest neighbour and distance- Nearest neighbour reasoning- nearest neighbour for predictive modelling- methods and issues with nearest neighbour methods-clustering – clustering around centroid

Evaluating classifiers- confusion matrix-evaluation- base line performance and implications

Visualising model performance-ranking instead of classifying- profit curves- ROC graph and curves-cumulative response and lift curves

Module 4: Evidence and probabilities

Evidence and probabilities- combining evidence probabilities- joint probability and independent- Bayes' rule – applying Bayes' rule to data science-a model of evidence 'Lift'

Module 5: Representing and mining text

Representation – bad of words-term frequency- measuring sparseness- beyond bag of words-N-gram sequences- Named entity extraction- application

Basic Reading List

Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking, by Foster Provost and Tom Fawcett, O'Reilly Media; 2013

Data Mining and Business Analytics with R, by Johannes Ledolter; (2013)

Business Analytics, by James Evans, Pearson, 2016

ASSESSMENT

25 % Continuous / Formative Assessment (see PG Regulations).   75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format Time : 3 hours   Maximum Marks : 75

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks) . Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions in Section C to be answered in less than 1200 words (3*10= 30 marks)

Semester IV

BEDS-CC- 241: BASICS OF BEHAVIOURAL FINANCE

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	To familiarize with basic aspects of behavioural finance	PSO1	Fa	Co	Assignment on basic aspects of behavioural finance
CO2	To understand about building block of behavioural finance	PSO2	Un	Co	Seminar on building block of behavioural finance
CO3	To understand about rationality from an economics and evolutionary prospective	PSO1	Un	Co	Assignment on rationality from an economics and evolutionary prospective
CO4	To familiarize with external factors and investor behaviour	PSO2	Fa	Co	Seminar onexternal factors and investor behaviour
CO5	To familiarize with behavioural corporate finance:	PSO3	Fa	Fa	Seminar on behavioural corporate finance:

Course Content

Module 1: Introduction

Behavioural Finance: Nature, Scope, Objectives and Significance & Application-History of Behavioural Finance, Psychology: Concept, Nature, Importance, The psychology of financial markets, The psychology of investor behaviour, Behavioural Finance Market Strategies, Prospect Theory, Loss aversion theory under Prospect Theory & mental accounting—investors Disposition effect .

Module 2: Building block of Behavioural Finance

Cognitive Psychology and limits to arbitrage - Demand by arbitrageurs: Definition of arbitrageur; Long-short trades; Risk vs. Horizon; Transaction costs and short-selling costs; Fundamental risk; Noise-trader risk; Professional arbitrage; Destabilizing informed trading (positive feedback, predation) - Expected utility as a basis for decision-making - The evolution of theories based on expected utility concept.

Module 3: Rationality from an economics and evolutionary prospective

Elsberg's paradoxes, Rationality from an economics and evolutionary prospective- Different ways to define rationality: dependence on time horizon, individual or group rationality - Herbert Simon and bounded rationality - Demand by average investors: Definition of average investor; Belief biases; Limited attention and categorization; Non-traditional preferences – prospect theory and loss aversion; Bubbles and systematic investor sentiment.

Module 4: External factors and investor behaviour:

External factors and investor behaviour: Fear & Greed in Financial Market, emotions and financial markets: geomagnetic storm, Statistical methodology for capturing the effects of external influence onto stock market returns

MODULE 5:BEHAVIORAL CORPORATE FINANCE:

Empirical data on dividend presence or absence, ex-dividend day behaviour - Timing of good and bad corporate news announcement -Systematic approach of using behavioural factors in corporate decision-making -Neurophysiology of risk-taking - Personality traits and risk attitudes in different domains.

Basic Reading List

Finding Financial Wisdom in Unconventional Places (Columbia Business School Publishing)

Bisen,pandey-Learning Behavioural Finance(Excel Books)

A History of Financial Speculation: Edward Chancellor

Forbes- Behavioural Finance (Wiley India)

The Little Book of Behavioral Investing (Montier)

The Psychology of Persuasion (Collins Business Essentials)

Behavioural Finance: Understanding the social, cognitive and economic debates, Edwin

Burten and Sunit N Shah, Wiley, 2013

Behavioural Finance, Chandra. Prasanna.Mcgraw Hill

ASSESSMENT

25 % Continuous / Formative Assessment (see PG Regulations).   75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format

Time : 3 hours   **Maximum Marks : 75**

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks) Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions in Section C to be answered in less than 1200 words (3*10= 30 marks)

BEDS-CC- 242: BEHAVIOURAL ECONOMICS AND POLICY DESIGN

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	To familiarize with basic aspects of behavioural policy design	PSO1	Fa	Co	Assignment on basic aspects of behavioural policy design
CO2	To understand about incentives and norms for public policy	PSO3	Un	Co	Seminar on incentives and norms for public policy
CO3	To understand about nudge and policy design	PSO1	Un	Co	Assignment onnudge and policy design
CO4	To familiarize with government policy –taxation	PSO2	Fa	Co	Seminar on government policy – taxation
CO5	To familiarize with behaviour and environment	PSO4	Fa	Fa	Seminar on behaviour and environment

Course Content

Module 1: Introduction

Behaviour economics –cognition – choice - policy design- bounded rationality- bounded self-control- bounded self-interest- public policy implications and application

Module 2: Incentives and norms for public policy

Incentives, norms and public policy- social forces in markets and collective action problem-social norms versus market incentives- getting incentives and norms right

Module: 3 Nudge and policy design

Behaviour economics and regulatory policy- nudge- policy design- simplification of information and choice-default and convenience- salience and attention- debasing and decision quality- regulatory methods- regulatory delivery

Module 4: Government policy –taxation

Taxation and tax compliance- tax attitude by individual tax payers- regulation- strategies-interaction between tax payers and tax authorities-practical implications

Module 5: Behaviour and environment

Standard economic approach to environment- psychology of environmentally sustainable-image motivation-loss aversion- saliency and availability bias- mental accounting-discounting- psychology of unsustainable consumption

Basic Reading List

Behaviour economics and policy designs, Ed, Donald Low, World Scientific, 2012

Economic Psychology (ed) Rob Rinyard, Wiley, 2018, chapter 16

Bounded Rationality and Public Policy- perspectives from behavioural economics, Alistar Munro, Springler, 2009

Scarcity, Why having too little means so much, Sendhil Mullainathan and Eldar Shafir; Time Books,

Regulatory Policy and Behavioural Economics, by Pete Lunn, OECD, 2014

Thinking Fast and Slow, Daniel, Kahneman,2011

Predictably irrational: the hidden forces that shape our decision; Dan Ariely, HarperCollins, 2008

ASSESSMENT

25 % Continuous / Formative Assessment (see PG Regulations). 75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format

Time : 3 hours **Maximum Marks : 75**

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks) . Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions in Section C to be answered in less than 1200 words (3*10= 30 marks)

BEDS-CC- 243: FOUNDATIONS OF DATA ANALYSIS USING R AND PYTHON

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	To familiarize with introduction to Data Science	PSO2	Fa	Co	Assignment onbasic aspects of data science
CO2	To understand about Basics of Coding in Python	PSO3	Un	Co	Seminar on basics of coding in python
CO3	To understand about Basic coding in R	PSO1	Un	Co	Assignment onbasic coding in R
CO4	To familiarize with Exploratory data analysis	PSO3	Fa	Co	Seminar onexploratory data analysis
CO5	To familiarize with Regression modelling	PSO4	Fa	Fa	Seminar on regression modelling

Course Content

Module 1: Introduction to Data Science

Why Data Science? What is Data Science? The Data Science Methodology - Data Science Tasks- Description - Estimation -Classification -Clustering -Prediction –Association

Module 2: Basics of Coding in Python

Downloading Python-Using Comments in Python - Executing Commands in Python - Importing Packages in Python- Getting Data into Python - Saving Output in Python - Accessing Records and Variables in Python - Setting Up Graphics in Python

Module 3: Basic coding in R

Downloading R and RStudio -Basics of Coding in R - Using Comments in R - Executing Commands in R - Importing Packages in R - Getting Data into R- Saving Output in R - Accessing Records and Variables in R

Module 4: Exploratory data analysis

Constructing Bar graphs, contingency tables, histogram using Python and R

Module 5: Regression modelling (simple, multiple and logistic)

The estimation task- performing multiple regression modelling using Python and R – estimation model evaluation using Python and R

Basic Reading List

Data science using Python and R, by Chandal D Larose and Daniel T Larose, Wiley, 2019.

Data Mining and Business Analytics with R, Johannes Ledolte, Wiley, 2013

ASSESSMENT

25 % Continuous / Formative Assessment (see PG Regulations). 75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format

Time : 3 hours   **Maximum Marks : 75**

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks) . Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions in Section C to be answered in less than 1200 words (3*10= 30 marks)

BEDS-DSE- 244: OPTIONAL

BEHAVIOURAL ECONOMICS AND PUBLIC HEALTH

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	To familiarize link between behavioural economics and public health	PSO3	Fa	Co	Assignment onbehavioural economics and public health
CO2	To understand about health behaviour	PSO3	Un	Co	Seminar on health behaviour
CO3	To understand about social norms, belief and action	PSO1/5	Un	Co	Assignment onsocial norms, belief and action
CO4	To familiarize with nudging individuals	PSO2/5	Fa	Co	Seminar onnudging individuals
CO5	To understand with deciding better health policies	PSO2/5	Un	Fa	Seminar on better health policies

Course Content

Module 1: Link between behavioural economic and public health

Module 2: Health behaviour

Inter-temporal choice for health-maintenance of healthy behaviours- forming and changing habits- emotions and making health decision

Module 3: Social norms, belief and action

Module 4: Nudging individuals

Nudging individuals for selecting healthy foods- incentivising healthy behaviour

Module 5: Deciding better health policies

Deciding health policies- improving the role of government

Basic Reading List

Behavioural Economics and Public Health, by Christina A. Roberto , Ichiro Kawachi, Oxford University Press, 2015

Behavioural Economics and Healthy Behaviours, by Yaniv Hanoch , Andrew Barnes and, Thomas Rice (Eds.), Routledge; 2017

ASSESSMENT

25 % Continuous / Formative Assessment (see PG Regulations).   75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format

Time : 3 hours   **Maximum Marks : 75**

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks) . Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions in Section C to be answered in less than 1200 words (3*10= 30 marks)

BEDS 244- OPTIONAL BEHAVIOURAL ECONOMICS AND TOURISM

Course Outcomes

CO	CO Statement	PO/PSO	CL	KC	Assessment
CO1	To familiarize with tourism and traditional thinking	PSO1	Fa	Co	Assignment on tourism and traditional thinking
CO2	To understand about behavioural perspectives in tourism	PSO3	Un	Co	Seminar on behavioural perspectives in tourism
CO3	To understand about smart thinking for destination	PSO1/5	Un	Co	Assignment on smart thinking for destination
CO4	To familiarize with behaviour of smart thinking for companies	PSO2/5	Fa	Co	Seminar onbehaviour of smart thinking for companies
CO5	To understandbest practices and approach using smart thinking	PSO4/5	Un	Fa	Seminar onbest practices and approach using smart thinking

Course Content

Module 1:Tourism and traditional thinking

Tourism economic thinking-the complexity of a single system-institution and destination management-managing resources-planning and managing growth

Module 2: Tourism of the future

Dynamism in the tourism sector- Behaviour perspectives to the changing system

Module 3: Behaviour- smart thinking for destination

Behaviour-smart thinking for future-Behaviour – smart thinking for now- the behaviouraly optimised destination

Module 4: Behaviour-smart thinking for companies

Aligning with 21st century traveller- new norms for doing business-reverse responsibility

Module 5: Best practices and approach using smart thinking

Basic Reading List

Behaviour economics for tourism- a perspective on business and policy in the travel industry-by Milena S Nikolova, Academic Press, 2020

Economic Psychology of Travel and Tourism, John C. Crotts, W. Fred van Raaij, Psychology Press, 1994

Consumer Behaviour in Tourism, Susan Horner, John Swarbrooke, Routledge, 2016

ASSESSMENT

25 % Continuous / Formative Assessment (see PG Regulations).   75 % End-semester/Summative Assessment: 3 hour written Exam.

Model Question in OBE Format

Time : 3 hours   **Maximum Marks : 75**

This question paper has three sections. All questions in Section A to be answered (10*1=10 marks) . Seven questions out of 10 in Section B to be answered in less than 400 words (7*5= 35 marks). Three questions in Section C to be answered in less than 1200 words (3*10= 30 marks)

BEDS-D- 225: Behavioural and Data Science Project/Internship

Course Outcome

The objective of project/Internship is to develop research aptitude and skills among the students. Students produce a well structured dissertation work meeting standard requirements of academic writing.

Dissertation Format

General Guidelines

1. Selection of a Topic
2. Pilot study, if needed
3. Review of Literature
4. Research Gap (Optional for PG)
5. Statement of research Problem
6. Research objectives
7. Hypotheses (Optional for PG)
8. Methodology-Theoretical framework (Optional for PG), Conceptual Framework – precise and specific meaning of the terms / concepts /variables, Coverage (Universe/ Sample & period of study),Data source (Primary/Secondary), Tools of analysis
9. Significance of the Study and its social relevance.
10. **Chapter outlines**
    i. Introductory Chapter   ii. Background Chapter
    ii. Analysis Chapters   iv. Conclusion Chapter
11. Appendices
12. References

Mark Distribution:

Introduction - 10%

Review of literature and Research Gap - 10%

Statement of the research Problem, Objectives and Methodology-20%

Analysis and establishment of objectives -50%

Conclusion & Bibliography-10%

Structure of the Report

A. Title Page/ Cover Page

a. Title page
b. Title of the project
c. Name of the candidate/candidate code d. Degree for which project is submitted. e. Name of

the college

f. Month and year the project is presented

B. Declaration of the student

C. Certificate of the supervising teacher

D. Acknowledgments

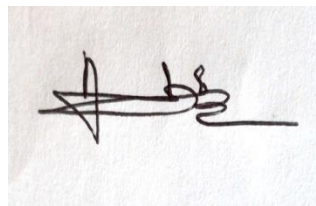**E. Table of contents**

a. List of Tables

b. List of Figures

c. Glossary

d. List of abbreviations

Length of the Project

1. Report length 50 to 60 pages excluding Appendix and Certificates
2. Alignment : Justify
3. Font :Times New roman
4. Font size : 12
5. Line spacing : 1.5

Kariavattom   **Prof.(Dr.) ABDUL SALIM, A**

11/10/2020   **Chairman, Board of Studies In Economics(PG),**

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