Category I
Bachelor in Management Studies (Honours)

DISCIPLINE SPECIFIC CORE COURSE -7 (DSC-7) – : INTRODUCTION TO BUSINESS ANALYTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Total Hours of Teaching	Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical / Practice			
Introduction to Business Analytics (DSC 7)	4	3	0	1	75	Class XII with Mathematics	Statistics for Business Decisions

Learning Objectives
The Learning Objectives of this course are as follows:
- Familiarise students with basics of predictive and prescriptive analytics in order to solve some business problems using different types of data
- Students should be able to solve business problems, analyse data sets using various relevant statistical software packages, and interpret and effectively communicate the results

Learning outcomes
The Learning Outcomes of this course are as follows:
- Understand fundamental concepts in machine learning
- Build basic models in Statistical Softwares
- Interpret results
- Compare results of different models to select the best fit
- Drive business decisions using model output

SYLLABUS OF DSC-7

Unit 1: Introduction to Business Analytics and Descriptive Analytics   (20 hours)
Introduction to Business Analytics: Role of Analytics for Data Driven Decision Making; Types: Descriptive Analytics, Predictive Analytics, and Prescriptive Analytics. Introduction to the concepts of Big Data Analytics, Web and Social Media Analytics. Overview of Machine Learning Algorithms. Introduction to relevant statistical software packages and carrying out descriptive analysis through it.

Unit 2: Predictive Analytics 1   (15 hours)
Simple Linear Regression: Estimation of Parameters, validation of simple linear regression model, Coefficient of determination, Significance tests, Residual analysis, Confidence and Prediction intervals.
Multiple Linear Regression: Interpretation of Partial regression coefficients, working with

categorical variables, Multi-collinearity and VIF, Outlier Analysis, Auto-correlation, transformation of variables, variable selection in regression model building.

Unit 3: Predictive Analytics 2 (20 hours)

Logistic and Multinomial Regression: Logistic function, Estimation of probability using logistic regression, Omnibus Test, Wald Test, Hosmer Lemshow Test, Pseudo R Square. **Model Performance:** Classification table (sensitivity, specificity, accuracy paradox, precision, F score), Gini coefficient, ROC, AUC, methods for determining the optimal cutoff probability.

Unit 4: Machine Learning Models (20 hours)

Decision Trees: Introduction, Chi-Square Automatic Interaction Detection, Bonferroni Correction, Classification and Regression Tree, Gini Impurity Index, Entropy, Cost based splitting Criteria, Ensemble Methods, Random Forest.

Clustering: Introduction, Distance and Dissimilarity measures used in clustering, Quality and Optimal Number of clusters, Clustering Algorithms, K-Means clustering, Hierarchical Clustering.

Practical component (if any) -
   Practical Exercises:
   1. Prepare and import data (financial data of companies, macroeconomic data, primary data collected through questionnaires). Calculate and interpret descriptive statistics on R/Python.
   2. Perform simple OLS regression on R/Python and interpret the results obtained.
   3. Test the assumptions of OLS (multicollinearity, autocorrelation, normality etc.) on R/Python.
   4. Perform regression analysis with categorical/dummy/qualitative variables on R/Python.
   5. Perform probabilistic regression models (logit and probit) along with validation tests and classification table on R/Python.
   6. Apply and interpret the results of decision trees and clustering models on R and Python.

Essential/recommended readings
   1. Business Analytics: The Science of Data Driven Decision Making, First Edition (2017), U Dinesh Kumar, Wiley India.

Suggestive readings
   1. Introduction to Machine Learning with Python, Andreas C. Mueller and Sarah Guido, O'Reilly Media, Inc.
   2. Data Mining or Business Analytics – Concepts, Techniques, and Applications in Python. Galit Shmueli, Peter C. Bruce, Peter Gedeck, and Nitin R. Patel. Wiley.
   3. Relevant Case Studies from different functional domains of business to be used while covering the Predictive Analytics and Machine Learning models. Following Case Studies may be taken up along with the course topics:
   ■ Merton Truck Company (HBS Case).
   ■ Supply Chain Optimization at Madurai Aavin Milk Dairy (IIMB Case).
   ■ Red Brand Canners (Stanford Case); Managing Linen at Apollo Hospitals (IIMB Case).

DISCIPLINE SPECIFIC CORE COURSE – 8 (DSC-8): MACROECONOMICS

Credit distribution, Eligibility and Prerequisites of the Course

Course title & Code	Credits	Credit distribution of the course			Total Hours of Teaching	Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice			
Macroeconomics (DSC 8)	4	3	1	0	60	Class XII	Microeconomics

Learning Objectives

The Learning Objectives of this course are as follows:
- Determination of and linkages between major economic variables; level of output and prices, inflation, interest rates and exchange rates.
- The course is designed to study the impact of monetary and fiscal policy on the aggregate behaviour of individuals.

Learning outcomes

The Learning Outcomes of this course are as follows:
- Understand the determination of key macroeconomic variables.
- Describe models of determination of equilibrium outputs, prices and rate of interest.
- Analyse the role of the Government in an economy and examine how it uses its fiscal and monetary policy to influence macroeconomic variables.
- Explain the working of an open economy

SYLLABUS OF DSC- 8

Unit 1   (8 hours)

Basic understanding of Ancient Indian Economy, Wealth and its various aspects as per Vedic Philosophy; Kautilya's view on Ways of Financial Management and Economic Governance, Proposition of Welfare states and Good Governance by Kautilya as the foundation of strong Indian Economy; Relevance of Kautilya's Arthsashtra in making of modern and advanced India.

Unit 2   (24 hours)

Classical theory of income and employment: Quantity Theory of Money–Cambridge version, Classical aggregate demand curve, Classical theory of interest rate, effect of fiscal and monetary policy.

Simple Keynesian model: goods and money market equilibrium, changes in equilibrium, multiplier, effect of fiscal and monetary policy; IS-LM model: properties of IS-LM curves, factors affecting the position and slope of IS-LM curves, determination of equilibrium income and interest rates, effect of monetary and fiscal policy; slopes of IS-LM curves and effectiveness of fiscal and monetary policies.

Unit 3   (12 hours)

Inflation: meaning; demand and supply side factors; natural rate theory; monetary policy-output and inflation (monetarist view); Phillips curve: short run and long run.

Unit 4 **(16 hours)**
Brief introduction to Balance of Payment (BOP) account; market for foreign exchange and exchange rate; monetary and fiscal policy in open economy; Mundell Fleming model: perfect capital mobility and imperfect capital mobility under fixed and flexible exchange rate.

Practical component (if any) - None
Essential/recommended readings

1. Froyen, R. P. (2011): Macroeconomics-theories and policies (8th Edition). Pearson.

2. Dornbusch and Fischer (2010): Macro economics (9th Edition).Tata McGraw Hill.N

3. Gregory Mankiw (2010). Macro economics (7th Edition).Worth Publishers

4. Kautilya's Arthashastra-The way of Financial management and economic governance (2012)(6 th Edition) Jaico Publishing House

Suggestive readings (if any)

DISCIPLINE SPECIFIC CORE COURSE– 9 (DSC-9): ORGANISATIONAL BEHAVIOUR

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Total Hours of Teaching	Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice			
Organisational Behaviour (DSC 9)	4	3	1	0	60	Class XII	None

Learning Objectives
The Learning Objectives of this course are as follows:
- Course presents an integrated view of human behaviour in organisations.
- Building understanding of individual and group behaviour at work for improving the effectiveness of organisations.

Learning outcomes
The Learning Outcomes of this course are as follows:
Upon completion of the course a student shall be competent to:
- Understand the importance of Organisational Behaviour as a field of study.
- Understand the role of Perception, personality and learning in explaining Individual behaviour and to apply different motivational theories and leadership styles to increase the productivity and job satisfaction of employees.
- Understand the foundations of group behaviour and the framework for organisational change and development.
- Identify methods to enhance individual and Organisational wellbeing and resolve organisational problems.

SYLLABUS OF DSC-9

Unit 1: Core Concepts in OB in Managing Individual Behaviour **(16 hours)**

Conceptual Foundations and Importance of organizational Behaviour. Perception and Attribution: Concept, Factors affecting Perception, Attribution theory, Perceptual Organization and Errors in Perception. Personality: Concept, Factors affecting personality and Theories. Learning: Concept and Theories of Learning, Concept of Reinforcement, Schedules of Reinforcement.

Unit 2: Motivation at work, Interpersonal relations & Change Management (16 hours)
Motivation: Concepts and their application, Content theories (Maslow, McClelland and Herzberg's Theories); Process theories (Expectancy theory, Equity theory). Analysis of Interpersonal Relationship: Transactional Analysis, Johari Window. Organisational Change: Concept, Resistance to change, managing resistance to change, Kurt Lewin Theory of Change.

Unit 3: Leadership and Group Processes **(12 hours)**
Leadership: Trait Approach, Behavioural theories (Ohio and Michigan State Studies, and Blake & Mouton's Managerial grid), and Contingency theories (Fiedler's Contingency Model, Hersey & Blanchard's Situational Leadership Model) Contemporary Leadership issues: Charismatic, Transactional and Transformational Leadership. Groups and Teams: Definition, Stages of Group Development, Group Processes-Group Cohesiveness, Group Think, Group Shift.

Unit 4: Managing Conflict and Enhancing Wellbeing **(16 hours)**

Organisational Power and Politics: Concept, Sources of Power, Tactics to gain power in Organizations. Nature of organisational politics. Conflict: Concept, Sources, Types, Stages of conflict, Management of conflict. Well-being at Work: Importance and Impact of employee emotions and emotional intelligence in organisations. Work stress and its management.

Practical component (if any) - None

Essential/recommended readings
1. Stephen P. Robbins, T. A. (2016). Organisational Behavior. Pearson.='
2. Aswathappa, K., & Reddy, G. S. (2009). Organisational behaviour (Vol. 20). Mumbai: Himalaya Publishing House
3. Luthans Fred, Organisational Behaviour, Tata Mc Graw Hill.
4. Singh Kavita, Organisational Behaviour, Pearson.

Suggestive readings
1. Greenberg Jerald and Baron Robert A.: Behavior in Organisations: Understanding and Managing Human side of work, Prentice Hall of India

Note: **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**