St. Xavier's College (Autonomous), Ahmedabad

FACULTY OF ARTS

DEPARTMENT OF ECONOMICS (SF)

BA. Hons. (Economics) SF

SEMESTER-1

Minor Course: Statistics for Economics-1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credit Distribution of The Course			Eligibility Criteria	Pre-requisite(s) of the Course (if any)
	Lectures	Tutorial	Practical / Practice		
Statistics for Economics-1 (ECHMN111C)	4	0	0	10 + 2 from a recognized board in any stream	None

Learning Objectives (LO):

1. Build a foundation in descriptive statistics, including graphical and tabular displays, numerical measures, and data visualization best practices.
2. Understand key concepts in probability theory, including random variables, probability distributions, and their applications in statistical inference.

Course Outcomes (CO):

1. Apply descriptive statistics tools such as frequency distributions, histograms, boxplots, and summary statistics to summarize and interpret categorical and quantitative data.
2. Use probability rules, discrete probability distributions (binomial, Poisson, hypergeometric), and foundational inference techniques to analyse uncertainty and solve real-world problems.

Chapter-1: Descriptive Statistics: Tabular and Graphical Displays

Descriptive Statistics, Tabular and Graphical Displays, Summarizing Data for a Categorical Variable, Frequency Distribution, Relative Frequency, Percent Frequency

Distributions, Bar Charts, Pie Charts, Summarizing Data for a Quantitative Variable, Dot Plot, Histogram, Cumulative Distributions, Stem-and-Leaf Display, Summarizing Data for Two Variables Using Tables, Crosstabulation, Simpson's Paradox, Summarizing Data for Two Variables Using Graphical Displays, Scatter Diagram, Trendline, Side-by-Side Bar Charts, Stacked Bar Charts, Data Visualization, Effective Graphical Displays, Data Dashboards.

Chapter-2: Descriptive Statistics: Numerical Measures

Descriptive Statistics, Numerical Measures, Measures of Location, Mean, Weighted Mean, Median, Geometric Mean, Mode, Percentiles, Quartiles, Measures of Variability, Range, Interquartile Range, Variance, Standard Deviation, Coefficient of Variation, Measures of Distribution Shape, Relative Location, Detecting Outliers, z-Scores, Chebyshev's Theorem, Empirical Rule, Five-Number Summaries, Boxplots, Measures of Association Between Two Variables, Covariance, Correlation Coefficient.

Chapter-3: Introduction to Probability

Introduction to Probability, Random Experiments, Counting Rules, Combinations, Permutations, Assigning Probabilities, Events and Their Probabilities, Complement of an Event, Addition Law, Conditional Probability, Independent Events, Multiplication Law, Bayes' Theorem, Tabular Approach.

Chapter-4: Random Variable and Mathematical Expectations

Discrete Probability Distributions, Random Variables, Discrete Random Variables, Continuous Random Variables, Developing Discrete Probability Distributions, Expected Value, Variance, Bivariate Distributions, Covariance, Financial Portfolios, Binomial Probability Distribution, Binomial Experiment.

Textbook:

- Anderson, D. R., Sweeney, D. J., Williams, T. A., Camm, J. D., Cochran, J. J., Fry, M. J., & Ohlmann, J. W. (2020). Statistics for business & economics (14th ed.). Cengage Learning.

Suggestive Reading

1. Larsen, R.J. and M.J. Marx (2017) – An Introduction to Mathematical Statistics and Its Applications, Pearson Education, 6th edition.
2. Wackerly, D., Mendenhall, W., & Scheaffer, R. (2014) – Mathematical Statistics with Applications, Cengage Learning, 7th edition.
3. Hogg, R. V., Tanis, E. A., & Zimmerman, D. L. (2018) – Probability and Statistical Inference, Pearson, 10th edition.
4. Casella, G., & Berger, R. L. (2002) – Statistical Inference, Duxbury Press, 2nd edition.

St. Xavier's College (Autonomous), Ahmedabad

FACULTY OF ARTS

DEPARTMENT OF ECONOMICS (SF)

BA. Hons. (Economics) SF

SEMESTER-1

Minor Course – 1: Principles of Economics-1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credit Distribution of The Course			Eligibility Criteria	Pre-requisite(s) of the Course (if any)
	Lectures	Tutorial	Practical / Practice		
Principles of Economics-1	4	0	0	10 + 2 from a recognized board in any stream	None

LO:

1. Understand fundamental microeconomic principles including decision-making, market behaviour, elasticity, and policy impacts.

2. Analyse how consumers, producers, and governments interact within markets to determine prices, quantities, and welfare outcomes.

CO:

1. Apply core microeconomic concepts such as demand, supply, and elasticity to interpret real-world market scenarios and policy effects.

2. Evaluate the implications of government interventions, price controls, and taxation on market efficiency and equity.

Unit–1: Ten Principles of Economics:

How People Make Decisions, People Face Trade-Offs, The Cost of Something Is What You Give Up to Get It, Rational People Think at the Margin, People Respond to Incentives, How People Interact, Trade Can Make Everyone Better Off, Markets Are Usually a Good Way to Organize Economic Activity, Adam Smith and the Invisible

Hand, Adam Smith Would Have Loved Uber, Governments Can Sometimes Improve Market Outcomes, How the Economy as a Whole Works, A Country's Standard of Living Depends on Its Ability to Produce Goods and Services, Prices Rise When the Government Prints Too Much Money, Society Faces a Short-Run Trade-Off between Inflation and Unemployment.

Unit–2: The Market Forces of Supply and Demand:

Markets and Competition, What Is a Market, What Is Competition, Demand, The Demand Curve: The Relationship between Price and Quantity Demanded, Market Demand versus Individual Demand, Shifts in the Demand Curve, Two Ways to Reduce Smoking, Supply, The Supply Curve: The Relationship between Price and Quantity Supplied, Market Supply versus Individual Supply, Shifts in the Supply Curve, Supply and Demand Together, Equilibrium, Three Steps to Analyzing Changes in Equilibrium, Price Increases after Disasters, How Prices Allocate Resources, Price Gouging.

Unit–3: Elasticity and Its Application:

The Elasticity of Demand, The Price Elasticity of Demand and Its Determinants, The Price Elasticity of Demand with Numbers, The Midpoint Method: A Better Way to Calculate Percentage Changes and Elasticities, The Variety of Demand Curves, Total Revenue and the Price Elasticity of Demand, A Few Elasticities from the Real World, Elasticity and Total Revenue along a Linear Demand Curve, Other Demand Elasticities, The Elasticity of Supply, The Price Elasticity of Supply and Its Determinants, The Price Elasticity of Supply with Numbers, The Variety of Supply Curves, Three Applications of Supply, Demand, and Elasticity, Can Good News for Farming Be Bad News for Farmers, Why Has OPEC Failed to Keep the Price of Oil High, Does Drug Interdiction Increase or Decrease Drug-Related Crime, Elasticity of Supply and Demand in the Ride-share Market.

Unit–4: Supply, Demand, and Government Policies

The Surprising Effects of Price Controls, How Price Ceilings Affect Market Outcomes, How to Create Long Lines at the Gas Pump, Why Rent Control Causes Housing Shortages Especially in the Long Run, Rent Control, How Price Floors Affect Market Outcomes, Controversies over the Minimum Wage, The Minimum Wage, Evaluating Price Controls, The Surprising Study of Tax Incidence, How Taxes on Sellers Affect Market Outcomes, Should the Minimum Wage Be $15 an Hour, How Taxes on Buyers Affect Market Outcomes, Can Congress Distribute the Burden of a Payroll Tax, Elasticity and Tax Incidence, Who Pays the Luxury Tax, Conclusion.

Textbook:

- Principles of Economics- Mankiw (10th ed.)

Suggestive Reading

1. Principles of Economics – Mankiw (10th ed.), Economics – Samuelson & Nordhaus (19th ed.)
2. Principles of Economics – Case, Fair & Oster (13th ed.)
3. Principles of Microeconomics – Stiglitz & Walsh (2nd ed.)