



## GUJARAT UNIVERSITY

### Course work for Ph.D.

#### **Introduction:**

The course work for doctoral research has been made mandatory by the UGC. The course work is prepared as per the notification given in booklet titled Rules, Regulations and Ph.D. Ordinances of Gujarat University (O.Ph.D.8. Course work - Credit, Content and Evaluation, attached at end of this document). The course work is designed in such a way as to support, motivate and encourage quality research. By undergoing this course work, the student will get equipped with fundamentals of research methodology, computer skills required for research, input in presenting research finding, recent developments in the field of specialization, field work, developing cases in the chosen area etc. the course work must be completed by the student in a satisfactory manner, ideally during the 1 year.

#### **Course Structure:**

PAPER	TITLE	CREDIT	HOURS	TOTAL MARKS
COURSE - I	Research Skills (Common Syllabus for All Discipline)	5	75	100
COURSE - II	Subject Specific Course Work (Specific Syllabus for each Discipline)	5	60	100
COURSE - II	Field work / Academic Activities	1	15	

## **COURSE: RESEARCH METHODOLOGY**

**(5 Credits, 75 hours)**

**COMMON FOR ALL AREAS:**

### **Objectives:**

This paper will help the students to understand the relevance and role of research methodology and the significance of the research tools in all functional areas of commerce. It will also help to distinguish between the different kinds of research available, based on the purpose and nature of the problem. The course will emphasize the types of research, data collection methods, analysis and inferences and conclusions. The course is also intended to provide computer and communication skills for research work.

### **Unit 1: Introduction to Research:**

**(10 Hours)**

Meaning and types of Research: Basic Research, Pure Research, Applied Research, Modern Scientific approach to Research, Research in Business, Research process, Designing a research study, Criteria of Good Research, Salient features of Research Projects, Scope of a Research Study, Delimitation, Evaluations of Research study, Research Design: Criteria for evaluation of a Research study. factors affecting the selection of problems and problem statements - Review of literature - Elements of scientific methods, objectives, specifications, formulation of hypothesis, Model building and nature and identification of variables, Quantitative, Qualitative, Mixed and Historical research. Research Ethics, Codes and Policies for Research Ethics, Promoting Ethical Conduct in Science.

### **Unit 2: Data Collection and Description:**

**(15 Hours)**

Data Vs. Information, Types of Data: Primary Vs. Secondary Data, Time series Vs. Cross sectional Data, Panel Data, Sources of secondary data, Methods of Primary data collection, Developing a Questionnaire, Editing, Coding, Identifying missing observations and outliers, Classification and Tabulation of data, Concepts of a frequency distributions for a discrete and continuous random variable, Data representation: Bar Charts, Pie Charts, Histogram and Ogives, Observation studies, Survey Method, Pilot Survey, Population Vs. Sample Study,

Features of a Good sample, Determination of sample size, Sampling and Non-sampling errors, Lipstein's Nine Rules for minimizing non-sampling errors, Validity, Reliability, Precision, Sampling Frame, Sampling Fraction, Probability sampling methods: SRSWR, SRSWOR, Systematic sampling, Proportionate and disproportionate stratified sampling, Cluster sampling, Area Sampling, two stage sampling, Multistage sampling, PPS Sampling, Sequential Sampling, Non-probability sampling methods: Conveyance Sampling, Purposive sampling, Statistical judgment, Quota Sampling, Snowball sampling (Only description of the methods and their applications to practical situations)

**Unit 3: Overview of Univariate and Bivariate Analysis: (15 Hours)**

Overview of probability theory, Concept of a Frequency distribution and a probability distribution, Characterizing a frequency distribution and a probability distribution: Concept of Raw and Central Moments, Basic concepts and applications of the measures of Central Tendency, Dispersion, Skewness and Kurtosis, Bivariate correlation analysis, Rank Correlation, Probable Error of Correlation Coefficient, Simple Linear Regression, Nonlinear Regression, Growth Curves, Concept of Coefficient of Determination and its interpretation, Measures of Association for Nominal and Ordinal data, Statistics associated with Cross-Tabulations: Chi Square, Phi Coefficient, Contingency Coefficient, Cramer's V, Lambda Coefficient, Cross- Tabulation in Practice

**Unit 4: Business Forecasting: (15 Hours)**

Need of Forecasting, History of Forecasting, Types of Forecasts, Forecasting Process, Time-Series Forecasting : Components and models of time series, Methods of determination of Long-term trend : Method of Moving Averages, Simple Exponential Smoothing and Linear Least Squares Trend, Holt's and Winter's exponential Smoothing methods, Forecasting with multiple predictor variables : Multiple Regression model, Interpreting Regression Coefficients, Co-efficient of Determination and its interpretation, Measuring forecasting error, Choice of an appropriate forecasting technique.

**Unit 5: Exposure to different statistical packages and computer skills (10 Hours)**

Basics of computing, exposure to different data bases and developing expertise in word processing, electronic spread sheets and data base packages, use of internet and exposure to statistical packages, its utility and interpretation

**Unit 6: Communication and Research Reporting: (10 hours)**

Basics of Communication skills, Types of Scientific Communication, Structure of a Research Proposal, Structure of a Research Paper, Importance of publishing research papers, Publishing papers (Title, Running Title Authors Single and Multi-authorship, Writing Abstract, Selecting Keywords, Introduction section, Materials and Methods Section, Result Section, Figures: Design Principles, Legends, Table components Graph Types style Tables v/s Graph Discussion Section Format Grammar Style, Content, Acknowledgements, References), Different Styles of Communication with the Editor, Handling Referees' Comments, why report, Types of Report, i.e., General, Technical, etc., Structure of a Research Report, Styles of Report, Research Paper Preparation and Presentation, Structure of Synopsis.

**References for Research Methodology:**

1. Research Methodology: Concepts and Cases by Dr. Deepak Chawla and DL Neena Sondhi.
2. Kothari C R, Research Methodology (Methods and Techniques) New Age Publications
3. Donald Cooper & Pamela Schindler: "Business Research Methods" Tata McGraw Hill (9th Edition)
4. Sharon Lohr: "Sampling: Design and Analysis" Duxbury Press
5. Cochran W.G.: "Sampling Techniques" Wiley Eastern
6. Pulak Chakravarty: "Quantitative Techniques for Management and Economics" Himalaya Publishing House
7. Levin & Rubin: "Statistics for Management" Pearson Education
8. Hankey, Wichern & Reitsch: "Business Forecasting" Pearson Education

**Reference Books for Communication:**

- 1 Study and Communication Skills for the Biosciences by Stuart Johnson and Jon Scott Oxford
2. Write and Publish a Scientific Paper by Robert A. Day Oryx Press
3. Scientific Easy when you know how by Jennifer Peat BMJ Books

4. Research Projects and Research Proposals A Guide for Scientists Seeking funding by Paul G Chapin Cambridge University Press.

**Course II: Subject specific course work**  
(4 Credits, 60 Hours)

THIS COURSE IS DIVIDED INTO THREE PARTS. PART I CONSISTS OF SUBJECT OVERVIEW, PART II RELATES TO DEVELOPMENT OF RESEARCH SKILLS AND PART III CONTENTS ARE TO BE LEFT TO THE DISCRETION OF THE GUIDE DEPENDING UPON THE TOPIC OF THE RESEARCH. FURTHER THIS COURSE IS DESIGNED SEPARATELY FOR EACH AREA, VIZ. ACCOUNTING AND FINANCE, STATISTICS AND ECONOMICS. EVERY STUDENT WILL BE REQUIRED TO DO COURSE-II RELATED TO THE TOPIC OF PH.D. IRRESPECTIVE OF THE AREA OF SPECIALIZATION AT MASTERS' LEVEL.

**COURSE II ACCOUNTING AND FINANCE AREA**

**PART I: THEORETICAL FOUNDATIONS**

**(15Hours)**

For this part the following areas are to be covered:

- I Foundations of Accounting theory and its development stages
- II Corporate financial reporting and its regulations
- III Asset pricing theory
- IV International financial reporting standards
- V Linear programming, PERT and CPM

**PART II: STUDY OF EMERGING AREAS**

**(15Hours)**

For this part the following areas are to be covered:

- I Shareholders Value creation
- II Balanced Score Card
- III Contemporary issues in mergers and acquisitions
- IV Derivatives and their accounting
- V Strategic financial management

**PART III: APPLIED AREA**

**(30Hours)**

For this part the study area will be decided by the Guides and the areas should be specifically related to the topic of research.

**References:**

1. Ahmed Belkaoui, Accounting Theory, Harcourt Brace Jovanovich.
2. Eldon S. Hendriksen, Accounting Theory, Richard D. Irwin.
3. "Accounting Theory & Practice", Professor Jawaharlal, Himalaya Publishing House, New Delhi.

4. "Financial Management", M.Y. Khan & P.K. Jain, Tata McGraw Hill Education Private Ltd., New Delhi.
5. "Advanced Management Accounting", Professor Jawaharlal, S. Chand & Company Pvt. Ltd., New Delhi
6. "IFRS-A Practical Approach", Jasmine Kaur, Tata McGraw Hill Education Private Ltd., New Delhi.
7. "Financial Management Theory & Practice", Prasanna Chandra, Tata McGraw Hill Education Private Ltd., New Delhi.
8. "Corporate Financial Reporting", Prof. Jawaharlal, Taxmann Publications Pvt. Ltd., New Delhi.

## **COURSE I ECONOMICS AREA**

### **PART I: THEORETICAL AREAS**

**(25 hours)**

For this part the following areas of economics are suggested to be covered.

- I. Recent developments in Financial Economics include pricing of derivatives, investment decisions under uncertainty, fisher effect, wealth effects in money market, term structure of interest rates.
- II. Economics of Information, asymmetric information, moral hazard, adverse selection, signaling.
- III. Recent development in market analysis with reference to forms of monopolistic competition, theories of games and strategic behavior.
- IV. Recent developments in development economics concept and measurement of development, development patterns in the world.

#### **References:**

1. Advanced Economic Theory, H. L. Ahuja, S. Chand, New Delhi
2. Managerial Economics, Suma Damodaran, Oxford
3. Financial Economics, Chris Jones, Routledge Indian Edition
4. Economic Development, Todaro and Smith, Pearson Education

### **PART II: APPLIED AREAS**

**(25 hours)**

For this part the following areas of economics are suggested to be covered.

- I Fiscal policy
- II Monetary policy
- III Exchange rate policy
- IV Basics of open economy macroeconomics

#### **References:**

1. Economics: Principles and Applications, Gregory Mankiw, Cengage Learning
2. Macroeconomics Errol D'Souza, Pearson Education
3. Macroeconomics by G. S. Gupta
4. Macroeconomics by O'Sullivan, Sheffrin and Perez, Pearson



**PART III: APPLIED AREA****(10 hours)**

For this part the study area will be decided by the Guides and the areas should be specifically related to the topic of research.

**COURSE III: Field work/Academic Activities**  
**(1 Credit, 15 Hours)**

This paper will include the following activities:

Activities	Hours
Classes taken by Research scholars at School, etc. etc.	5
Library Research	5
Preparation of questionnaire and collection of data/ Literature review	5

**COURSE II BUSINESS MANAGEMENT AREA**  
**(4 Credits 60 Hours)**

Subject Specific Course work is divided into two parts: PART-I & PART-II

PART-I is divided into three parts as under:

**(15 Hours)**

- A. Theoretical Foundation (Any one of the three areas can be chosen)
- B. Emerging Areas (Any one of the three areas can be chosen)
- C. Developing Research Skills.

**PART-I**

A) Theoretical Foundation:

**1) Marketing Theory:**

- Development of Marketing Thought
- Definition and scope of marketing
- Foundations of Marketing Theory
- Marketing and Inter-disciplinary Foundations
- Theory Constructions and evaluation in marketing

**References:**

- (i) Marketing Theory: Evolution and Evaluation – Jagdish N. Sheth, David M-Gardner, Dennis E Garrett.
- (ii) Foundations of Marketing Theory: toward a general theory of marketing – Shelby D. Hunt.
- (iii) The Sage Handbook of Marketing Theory – Paulin Macloran, Michael Saren, Barbara Stern. Mark Tadajewshi.
- (iv) Marketing Theory: Foundations, Controversy, Strategy, Research Advantage – Shelby D. Hunt.

**2) Theory of Finance:**

- Asset Pricing Theory
- Capital markets Efficiency
- Behavioral Finance
- Market Microstructure Theory

**References:**

- Theory of Asset Pricing – George Pennachi, Prentice Hall
- From Capital Market Efficiency to Behavioural Finance – Markus Bruetsch, GRIN Publishing.
- Beyond Greed and Fear: Understanding Behavioural Finance: Hersh Shefrin: Oxford University Press.
- Advances in Behavioural Finance: Richard Thaler
- Market Microstructure Theory – Maurice O’Haru
- Market Microstructure: Intermediaries and the Theory of the Firm: Daniel F. Spulber

**3) Theory of General Management:**

- Corporate Governance
- Business Technology
- Corporate Social Responsibility
- Management of MSMEs.

**References:**

- Corporate Governance: Principles, Policies & Practices - A.C. Fernando, Pearson Education
- Theories of Corporate Governance - Thomas Clark, Rutledge
- The Power of Convergence: Linking Business Strategies & Technology decisions to create sustainable success - Faisal Hoque, New York Amp.
- Winning the 3-Legged Race - When Business & Technology run together, Prentice Hall, Financial Times.

**B) Emerging Research Areas in:****(15 Hours)****Marketing:**

- Marketing in a Network Economy and digital era.
- Service & Relationship Marketing
- Social & Not-for-Profit Marketing
- Contemporary Issues in: Green Marketing / Sports Marketing / Tourism Marketing / Rural Marketing / International Marketing.

**Finance:**

- Finance and Growth in Developing Countries; Micro Finance, Infrastructure.
- Global Financial Regulations & Financial Liberalization.
- Contemporary issues in Mergers & Acquisition
- Global Financial Turbulences

**General Management:**

- Ethics in Management
- Issues in Management of MFIs
- Risk Management in Banks
- Issues in regulations & governance in mutual funds, insurance companies & banks with reference to India.

**References:**

Research Papers and articles in reputed national and international journals.

**C) Writing Research paper (ANY TWO) (30 Hours)**

- (i)** Preparing project proposal and preparing a power point presentation.
- (ii)** Critical analysis of at least 10 research papers of interest published in referred journals, with respect to language, content, title, references, data, figures, analysis etc. & submitting a report on the same.
- (iii)** Writing & submitting a new article related to doctoral research topic for reputed journal.

**PART-II**

(Field Work / Academic Activities) (1 credit, 15 hours)

<b><u>Activity</u></b>	<b><u>Hours</u></b>
Classes taken by Researcher Scholar at School & Workshop, Seminar etc.	05
Preparation of questionnaire & Collection of Data for case development	10

## **COURSE I STATISTICS AREA**

### **Part-I Subject Overview**

**(30 Hours)**

#### **Unit-1: OVERVIEW OF PROBABILITY THEORY:**

Probability and its use in management science, Definitions of Probability, Probability and Inference, A Probabilistic model for an experiment, Law of Probability, Calculating probability of an event: Sample Point method, Event – Composition method, Bayesian Approach and Selective Probabilities, Bayes Theorem and its applications, Basic definition of a random variable, Probability distribution of a Discrete random Variable, Probability distribution of a continuous random variable, Expected Value of a Random Variable, Rules of Mathematical Expectation, Generating Functions: Moments and Moment Generating Function, Characteristic Function, Discrete Probability Distributions: Bernoulli, Binomial, Poisson, Geometric, Negative Binomial, Hyper Geometric Distributions, Continuous Probability Distributions: Uniform, Normal, Gamma, Beta-I, Beta-II, Exponential, Cauchy, Weibull, Lognormal distributions, along with their Mean and Variance, properties, M.G.F and their applications.

#### **Unit 2: Basics of Statistical Inference:**

Meaning of Statistical Inference, Parameter and Statistic, : An Estimator, Properties of a Good Estimator, Concepts of Point and Interval estimation, Confidence level, Confidence Interval, Level of significance, Statistical Testing of Hypothesis, Power of the test, Type-I and Type- II Errors, Null and Alternate Hypotheses, One Tailed and Two Tailed tests, Properties Normal Distribution and their applications in hypothesis testing, Large and Small Sample Tests.

#### **Unit:3 Basic Econometrics:**

Meaning of Econometrics, Methodology of Econometrics, Types of Econometrics, Mathematical Economics vs. Econometrics, Nature and Scope of Econometrics, Nature and Sources of Data for Econometric Analysis, Types of Data, Econometric Modeling: Traditional View of Econometric Modeling, **General Linear Model:** Concepts of Population Regression Function and Sample Regression Function, The Classical Linear Regression Model, Method of Ordinary Least Squares, Basic

Assumptions of OLS and their validity, Properties of Least Squares Estimators, Gauss-Markov Theorem,

#### **Unit: 4 Overview of Multivariate Analysis:**

Multivariate Analysis Defined, Basic Concepts of Multivariate Analysis, Classification of Multivariate Techniques, Guidelines for Multivariate Analyses and Interpretation, A Structured Approach to Multivariate Model Building, Multiple Discriminant Analysis, Factor Analysis, Cluster Analysis, Multidimensional Scaling, Correspondence Analysis, Decomposition Analysis, Data Warehousing and Data Mining, Neural Networks, Data Envelopment Analysis, Re-sampling; Introduction, Methodology, Methods, Problems and Limitations of these techniques, Interpretation of Output of all the above covered Statistical Techniques using atleast two Statistical Packages.

#### **Unit: 5 Overview of Basic O.R. Techniques:**

Definitions of O.R., Nature and Scope of O.R., Phases of O.R., Different types of Models in O.R., Applications of O.R. in the fields of Marketing, Finance, Planning, Research Development Techniques, Limitations of O.R., O.R. in India. Definitions of Linear Programming, Linear Programming as an Optimization Technique, Structure of an L.P. problem, Formulations of L.P. problem, Applications Of L.P.: Production planning problem, Advertising Media Selection problem, Oil Refinery Blending problem, Product Mix problem, Transportation Model, Formulation of Transportation Problem as an L.P. model, Assignment Problem: Formulation, Applications of Transportation and Assignment Problems, Traveling Salesman Problem. Concept of Network, Network Diagram, Concepts connected with a Network, Labeling Method, Critical Path Method, Determination of Floats: Total Float, Free Float and Independent Float, Project Evaluation and Review Technique (PERT), Crashing, Applications of CPM and PERT, Introduction to O.R. software.

#### **References:**

1. Bernard Ostle and Mensing R. W.: "Statistics in Research" Ith IOWA State University Press
2. Research Methodology: Concepts and Cases by Dr. Deepak Chawla and DL Neena Sondhi.

3. Wackerly, Mendenhall & Scheaffer: "Mathematical Statistics with Applications" Duxbury Advanced Series.
4. Hogg and Craig: "Introduction to Mathematical Statistics" Collie McMillan.
5. Meyer P.L.: "Introductory Probability and Statistical Applications" AddisonWiseley.
6. Casella & Berger: "Statistical Inference" Thomson Publications
7. Manoj Kumar Srivastav: "Statistical Inference –Testing of Hypothesis" PHI
8. Hogg & Tanis:" Probability and Statistical Inference" Pearson Education
9. Gujarati D "Basic Econometrics" Mc. Graw Hill
10. Ghosh S.K. "Econometrics: Theory and Applications" Prentice Hall of India
11. Sharma J.K.: "Introduction to Operations Research" Mc Milan.
12. Taha H. A.: "Operations Research- An Introduction" Pearson Education
13. Hair, Anderson, Tatham, Black: "Multivariate Data Analysis" Pearson Education
14. Sharma K. R.: "Business Research Methods" National Publishing House.
15. Zikmund R. A: "Business Research Methods" PHI.

#### **Part-II Developing Research Skills**

**(30 Hours)**

- Preparing Research proposal and preparing a power point presentation for the proposal. **(10 Hours)**
- Critical analysis of at least 10 research papers of interest published in refereed journals with respect to language, content, title, reference style, data, figures, tables, methodology, etc. and preparing a report on the same. (10 Hours)
- Book Review of any book related to the research topic. **(10 Hours)**

**Paper III: Fieldwork / Academic Activities  
(1 Credit, 15 Hours)**

This paper will include the following activities:

Activities	Hours
Classes taken by Research scholars at School, etc.	5
Library Research	5
Preparation of questionnaire and collection of data	5

**EVALUATION OF COURSE WORK**

The evaluation of the Ph.D. Course work shall be totally internal as per O.Ph.D..8. The first two courses carry marks of 100 each. The course wise evaluation will be as follows:

**COURSE I**

The evaluation will be common for all students. This course will be evaluated on the following basis:

Assignments	50 marks
Presentations	40 marks
Attendance	<u>10 marks</u>
Total	100 marks

**COURSE II**

This course will be evaluated by the subject teacher and shall be done separately for students of each area. The course will be evaluated on the following basis:

Assignments	50 marks
Presentations	40 marks
Attendance	<u>10 marks</u>
Total	100 marks

**COURSE III**

For the evaluation of this course the student should provide evidence of the work done at the end of the year.