

CORE – X

RESEARCH METHODOLOGY

Semester	Subject code	Category	Lecture		Theory		Practical		Credit
			Total hrs	Hrs/week	Total hrs	Hrs/week	Total hrs	Hrs/week	
IV		Core	90	6	90	6	0	0	6

COURSE OBJECTIVES

To enable the students to understand Research Methodology

COURSE OUTCOMES

On the successful completion of the course, students will be able to understand the key things about research

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	To understand the meaning of research and research process	K2
CO2	To analyze the importance of Review of Literature and role of computers in research	K4
CO3	To understand the significance of literature citations	K2
CO4	To understand the skill of writing a research report	K2
CO5	To apply the knowledge of computer in typing and formatting of a research report.	K3

MAPPING WITH PROGRAMME OUTCOMES:

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	M	M	M	M	M	M
CO2	M	M	M	M	M	M
CO3	M	M	M	M	M	M
CO4	M	M	M	M	M	M
CO5	M	M	M	M	M	M

S- Strong; M- Medium; L- Low

Unit -I: Research methodology; An Introduction**(18 Hrs)**

Meaning of research- Objectives of research- Motivation in research, Types of research- Basic and Applied research – Essential steps in research; Research process- Criteria of good research.

Unit-II: Review of Literature**(18 Hrs)**

Review of Literature – Need for Review of Literature - Research reading – consulting source material – Bibliography – index cards and reference cards. Role of computers in biological research, Plagiarism.

Unit- III: Literature Citations**(18 Hrs)**

Literature Citations; Different systems of Citing Reference – Name-Year System-Citation in the text, Name-Year System-List of References; Citation – Sequence System; Alphabet-Number System; Journal Abbreviations,

Unit- IV: Research Report**(18 Hrs)**

Introduction, Components of research report – Title – Authors & addresses – Abstract – Summary – Synopsis – Keywords – Introduction – Materials & Methods – Results – Discussion – Acknowledgements – General Introduction and General Discussion – Summary and Conclusions – Appendixes – References,

Unit-V: Research Formatting and Typing**(18 Hrs)**

Introduction – Paper – Margins – Paragraph indentations – Widow & Orphan lines – Spacing – Alignment – Hyphenation – Fonts – Pagination, Format of a thesis – Title page – Certificate page – Declaration page – Acknowledgement page – Table of contents – Abstract page – List of Tables – Figures – Abbreviations & symbols – Chapters – Quotations – Table – Summary – Appendixes – References – Figures.

DISTRIBUTION OF MARKS: Theory - 100% and Problems – Nil

TEACHING METHODOLOGY:

- ❖ Lectures
- ❖ Power point presentation
- ❖ Charts
- ❖ Models
- ❖ Group discussion
- ❖ Group assignments

TEXT BOOKS:

SL NO:	BOOK NAME	AUTHOR	PUBLISHER	YEAR OF PUBLICAT ION
01	Research Methodology and Statistical Techniques	Santosh Gupta	Laurier Books, Limited	2002
02	Research Methodology: For Biological Sciences	N Gurumani	MJP Publishers	2019
03	Introduction to Computers	Alexis Leon, Mathews Leon	VIKAS PUBLISHING	2009

REFERENCE BOOKS:

SL NO:	BOOK NAME	AUTHOR	PUBLISHER	YEAR OF PUBLICAT ION
01	Research methodology	C.R. Kothari	New Age International Publishers	2004
02	Research methodology	P. Saravanel	Kitab Mahal Distributors	2015
03	How to write and publish a scientific paper.	Robert A. Day and Barbara Gastel	Cambridge University Press	2012
04	Thesis and Assignment Writing - 3rd Edition	Jonathan Anderson, Millicent Poole	John Wiley & Sons Inc	1998

WEB REFERENCE:

<https://www.bookdepository.com>

<https://www.researchgate.net>

<https://www.scribd.com>

<https://bbamantra.com> › research-methodology

SYLLABUS DESIGNER:

1. Dr.J.Hemapriya, Assistant Professor
2. Dr. A.Vidhya HOD & Assistant Professor

RESEARCH METHODOLOGY

Sem	Subject Code	Category	Lecture		Theory		Practical		Credit
			Per week	Per sem.	Per week	Per sem.	Per week	Per sem.	
III	19CPBC3C	Core	4	60	4	60	-	-	4

COURSE OBJECTIVE:

To impart knowledge and skills required for research, problem formulation, analysis and solutions and interpretation.

COURSE OUTCOMES:

On the successful completion of the course, students will be able to -

CO Number	CO Statement	Knowledge Level (K ₁ – K ₄)
CO1	Understand some basic concepts of research and its methodologies.	K1
CO2	Identify appropriate research topics, select and define appropriate research problem and parameters.	K2
CO3	Provide knowledge on the key elements of a research report, write a research report or thesis using specific reference style.	K3
CO4	Describe the basic principles, the role biostatistics serves in biomedical research and assess data sources and data quality for the purpose of selecting appropriate data.	K3
CO5	Understand the ethics in animal experimentation	K4

(*CO – course Outcomes Knowledge Level: K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze).

MAPPING WITH PROGRAMME OUTCOMES:

COS	PO1	PO2	PO3	PO5	PO6
CO1	M	S	S	M	M
CO2	M	M	S	S	M
CO3	S	S	M	M	S
CO4	S	S	M	S	M
CO5	M	S	M	S	S

(S- STRONG

M-MEDIUM

L – LOW)

Total Hours: 60

UNIT I

Foundations of Research

[10 Hrs]

Introduction–research-meaning, objectives, motivation, Importance and need of research, types of research, criteria of good research, research process-meaning, stages in research work.

UNIT II

Research problem

[10 Hrs]

Research problem-defining a research problem, selecting and identifying the research problem, formulation of hypothesis- Types of research hypothesis, **Research design- meaning need and features of a good research design, different research design-experimental design**

UNIT III

Scientific writing characteristics

[15 Hrs]

Logical format for writing thesis and papers. Essential features of abstract, introduction, review of literature, materials and methods, and discussion. **Effective illustration of tables** and figures. Reference styles- Harvard and Vancouver systems

UNIT IV

Biostatistics

[15 Hrs]

Collection and classification of data, Framing a questionnaire, Diagrammatic and graphic representation of data measurement of central tendency - standard deviation, test of significance based on smaller samples - student 't' test , correlation and regression - chi square test for independence of attributes, ANOVA and its types.(20 hrs)

UNIT V

Bioethics and Patenting

[10 Hrs]

Declaration of Bologna, Ethics in animal experimentation, CPCSEA guidelines- Animal care and technical personnel environment, animal husbandry, feed, bedding, water, sanitation and cleanliness, waste disposal, anesthesia and euthanasia. Patenting - Definition of patent. Patenting and fundamental research

DISTRIBUTION OF MARKS: Theory - 100% and Problems – Nil

TEACHING METHODOLOGY:

- Black Board
- Power Point Presentations
- Assignments
- Demonstrations

TEXT BOOKS:

S.NO	AUTHOR	TITLE	PUBLISHER	YEAR OF PUBLICATION
1.	C. R Kothari	Research methodology methods and techniques	New age international publishers	2019

REFERENCE BOOKS:

S.NO	AUTHOR	TITLE	PUBLISHER	YEAR OF PUBLICATION
1.	C. R Kothari	Research methodology methods and techniques	New age international publishers	2019
2.	N .Gurumani	An introduction to biostatistics	MJP publisher	2015
3.	Veer bala rastogi	Biostatistics	Medtech	2015
4.	Dr. P. Ravilochanan	Research methodology	Margham publications	2012
5.	S. P .Gupta	Statistical methods	Sultan chand and sons	2012
6.	R.S.N.Pillai and Bagavathi	Statistics Theory and Practice	S.Chand	2010

WEB SOURCES:

1. <https://en.wikipedia.org/wiki/Researchdesign>
2. <https://us.humankinetics.com/blogs/excerpt/steps-of-the-research-process>
3. <https://lecturenotes.in/m/21513-research-methodology>

SYLLABUS DESIGNER:

- Dr.V.Prabha,Head & Assistant Professor of Bio-Chemistry
- Ms.T.Nalini, Assistant Professor of Bio-Chemistry

RESEARCH METHODOLOGY AND BIostatISTICS AND ENVIRONMENTAL BIOTECHNOLOGY

LIST OF EXPERIMENTS

- 1. Plagiarism Checking Software tools**
2. Scientific Writing
3. Survey methods
4. Qualitative research
- 5. Calculate the Neem leaves- mean and median**
- 6. Calculate the Neem leaves-standard deviation**
7. Determination of Total Solids, Total Dissolved Solids and Total Suspended Solids in Water
- 8. Estimation of Total Dissolved Oxygen concentration in Water**
9. Estimation of BOD of Water
10. Estimation of COD of Water
11. Isolation of Xenobiotic degrading bacteria

ELECTIVE - IV - BUSINESS ETHICS

Sem	Subject code	Category	Lecture		Theory		Credit
			Total Hrs	Hrs per week	Total Hrs	Hrs per week	
VI		Elective-IV	60	4	60	4	3

COURSE OBJECTIVE:

- To understand the importance of ethics in business and to acquire knowledge, capability to develop ethical practices for effective management.
- To know the ethics in various functional areas.

COURSE OUTCOMES:

On Successful completion Of the Course the student will be able:

CO Number	CO STATEMENT	Knowledge level (K1-K4)
CO1	To understand the nature of business ethics	K1
CO2	To develop skills of ethical decision making	K1
CO3	To be familiar with and manage ethics	K2
CO4	To develop skills of ethics in marketing and operations management	K2
CO5	To identify with the ethics in global business	K2

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	M	S	S	M	S	S
CO2	M	S	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	S	M	M	S	M
CO5	S	M	S	S	S	S

S – Strong; M – Medium; L – Low

UNIT- I INTRODUCTION TO BUSINESS ETHICS 15 Hours

Nature of Business ethics : Definition - Importance of ethics in business - Factors influencing business ethics - Ethics in management - Indian ethics for business - Sacred simplicity (Vedantic ethics) - Ethical values in Gita - Ethical dimensions of Gandhi - Ethics in Buddhism - Ethics in Sufism - Ethical issues in business.

UNIT-II ETHICAL DECISION MAKING 10 Hours

Attitudes and beliefs: Decision process of groups - Market forces - Environmental ethics.- Business ethics and society - Society expectations from business - Ethical issues in Terrorism - Ethical values and dilemmas. Decision making - Decision process in competitive pressures- Ethical decision making - Ethical decision dilemmas - Organisation and power politics - silent saboteurs.

UNIT- III MANAGING ETHICS 10 Hours

Building a value system : code of ethics - setting standards from top - Masculine and feminine values - Role of laws and enforcement - Rights and stakeholders - Rules and enforcement - Ethics committees - Training in ethics - Training programmes in ethics - Hot line – Ombudsman - Regular meetings - Ethics audits and bench marking.

**UNIT- IV ETHICS IN COMMERCIAL AND OPERATIONS
MANAGEMENT**

10 Hours

Ethics in marketing and industrial espionage :Consumer rights - Unethical practices in marketing - product related issues - Ethics in Advertising - Industrial espionage - Ethics in SCM and Intellectual property - Issues in purchase - Ethical issues in transport - Ethics in stores - Issues in civil contracts - Black marketing and hoarding - Bribery and corruption- Intellectual property rights - Ethics in operation and Technology.

UNIT- V ETHICS IN HRM

15 Hours

Ethics in HRM : Employment issues - privacy issues -Whistle blowing - Sexual harassment - Social responsibilities and ethical values - Global Business and ethics - Foreign bribery-avoiding sanctions - Develop conditions for business growth – Model business principles in USA -The Caux principles - IT and Ethics - Ethical concerns in E-commerce - Ethical issues in BPO- Ethical concerns of BT - Ethics in pharma sector.

Distribution of marks: Theory 100% and problem 0%

TEXT BOOKS:

S.NO	Authors	Title	Publishers	Year of publication
1	R.V.Badi & N.V.Badi	Business ethics	Vrinda Publication(p) ltd	2005
2	David J. Fritzsche	Business Ethics: A Global & Management Perspective	Tata McGrawHill	1998

3	Ramaswamy Namakumari	Strategic Planning - Corporate Strategy	MacMillan India Ltd	1994
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REFERENCE BOOKS:

S.NO	Authors	Title	Publishers	Year of publication
1	Laura P. Hartman	Perspectives in Business Ethics	Tata McGraw-Hill, 2nd Edition	2007
2	Peter Madsen & Jay M. Shafritz	Essential of Business Ethics	Meridian, New Delhi	1990
3	Ken Smith and Phil Johnson	Business Ethics and Business Behavior	Cengage Learning EMEA	1996
4	CSV Murthy	Business ethics, text and cases	Himalya publishing house	2006
5	SathishModh	Ethical Management	Macmillan	2006
6	B.P Banerjee	Foundations of Ethics and Management	Excel books	2005

TEACHING METHODOLOGY :

- 1.Chalk & Talk
2. Lecture
3. Seminar
4. Assignment
5. Chart preparation
6. PPT
7. Group Discussion
8. You tube class
9. Case study

10. Role play

SYLLABUS DESIGNER:

Mrs. A.Kalaiselvi, Assistant Professor, Department of Management Studies, D.K.M
College for Women

PAPER– IV:ELECTIVE PAPER A: SCIENTIFIC RESEARCH METHODOLOGY

Semester	Subject Code	Category	Instruction Hours						Credits
			Lecture		Theory		Practical		
			Per Week	Per Semester	Per Week	Per Semester	Per Week	Per Semester	
IV		Elective	3	45	3	45	0	0	3

COURSE OBJECTIVES:

- ❖ To study about the importance of research, literature survey, search engines and evaluation of analytical datas.
- ❖ To learn the scientific writing and publication of research articles.

COURSE OUTCOMES:

- On the successful completion of course, students will be able to

CO Number	CO statement	Knowledge level
CO1	Acquire good knowledge about the nature and importance of research	K2 & K4
CO2	Gain clear concepts of separation techniques	K2 & K3
CO3	Analyse the various error analysis and to evaluate the data	K3 & K4
CO4	Apply the statistical treatment of various tests	K3 & K4
CO5	Understand the conventions of thesis writing and paper publication	K3 & K4

* CO – Course Outcomes

Knowledge level K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze

MAPPING WITH PROGRAM OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	M	S	M	S	S
CO2	M	S	S	S	M	S
CO3	S	M	M	S	S	M
CO4	M	S	S	M	M	S
CO5	M	S	M	S	M	S

UNIT– I : Meaning of Research, Literature and Search Engines

9 hours

Nature and importance of research – aims, objective, principles and problems – selection of research problem – purpose of research – classification of scientific methods – role of theory – characteristics of research – **Types of research: fundamental or pure research – applied research – action research – historical research – experimental research.**

Survey of scientific literature – primary and secondary sources – citation index for scientific papers, journals and patents.

ASAP Alerts, CA Alerts, SciFinder, Chem Port, Science Direct, Web of Science, Scopus, STN International.

UNIT – II : Conduct of Research work

9 hours

Physical properties and methods of separation prior to analysis – Types of isolation techniques – Extraction methods – Soxhlet extraction, crystallization, sublimation – methods for vacuum sublimation and distillation under reduced pressure.

Chemistry of working with hazardous materials – acid sensitive – water sensitive – corrosive – toxic – explosive and radioactive materials.

UNIT – III : Evaluation of Analytical Data

9 hours

Evaluation of analytical data – Precision and accuracy – Mean, Median, Range, Deviation – Arithmetic – Relative arithmetic – Standard – Relative standard – Variance – Problems – Error in chemical analysis – Absolute, Relative, determinate, random – Systematic – Instrumental, Methodic, Personal, Proportional, Constant errors – Histogram – statistical methods – Gaussian Curve – normal distribution curve – Poisson curve – Characterizing measurements and results – Detection limits.

UNIT – IV : Statistical Treatment of Analytical Data

9 hours

Statistical treatment of finite samples – the students ‘t’ test and F test – Problems – Criteria for rejection of an observation – Q test – significant figures and computation rules – data plotting – Correlation diagram – least square analysis – correlation and regression analysis – correlation coefficient – bar diagram.

UNIT – V: Scientific Writing

9 hours

Scientific writings: Research reports – theses – journal articles and books.

Steps to publish a scientific article in a journal: Types of publications – communications – articles – reviews – when to publish – where to publish – specific format required for submission – organization of the material – Documenting: abstracts – indicative or descriptive abstract – informative abstract – footnotes – endnotes – referencing styles – bibliography – journal abbreviations.

Conventions of writing – the general format – page and chapter format – use of quotations and footnotes – preparation of tables and figures – referencing – appendices.

Distribution of hours: Theory – 80%; Problems – 20%

RESEARCH METHODOLOGY

SEM	SUBJECT CODE	CATEGORY	LECTURE		THEORY		PRACTICAL	CREDIT
III		Main Paper XII	6 hrs. per week	90	6 hrs. per week	90	NIL	5

COURSE OBJECTIVES:

- To provide knowledge on research methods, techniques, process.
- To develop skills in the application of research methods for business problem solving.

COURSE OUTCOMES:

On successful completion of the course, the student will be able

CO NUMBER	CO STATEMENT	KNOWLEDGE LEVEL (K1 – K5)
CO1	To familiarize and create awareness about research among PG students	K3
CO2	To identify the components of research design	K3, K4
CO3	To have a realistic approach through data collection and data processing	K3
CO4	To understand and analyse the sampling process	K4
CO5	To explore the process of submission of research report	K3

*Knowledge Level: K1- Remember; K2- Understand; K3- Apply; K4 Analyse

MAPPING WITH PROGRAMME OUTCOMES:

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	M	S	S	S	M
CO2	S	S	M	M	S	S
CO3	S	S	M	S	M	S
CO4	S	M	M	S	M	M
CO5	S	S	M	M	S	S

S-Strong; M-Medium; L-Low

UNIT I INTRODUCTION TO RESEARCH, RESEARCH PROBLEM AND HYPOTHESIS

(18hrs)

Meaning of research; Types of research- Exploratory research, Conclusive research; The process of research; Research applications in social and business sciences; Features of a Good research study.

Defining the Research problem; Management Decision Problem Vs Management Research Problem; Problem identification process; Components of the research problem; Formulating the research hypothesis- Types of Research hypothesis; Writing a research proposal- Contents of a research proposal and types of research proposals.

UNIT II RESEARCH DESIGN (18hrs)

Meaning of Research Designs; Nature and Classification of Research Designs; Exploratory Research Designs: Secondary Resource analysis, Case study Method, Expert opinion survey, Focus group discussions; Descriptive Research Designs: Cross-sectional studies and Longitudinal studies; Experimental Designs, Errors affecting Research Design.

UNIT III DATA COLLECTION AND PROCESSING (18hrs)

Primary and Secondary Data: Classification of Data; Secondary Data: Uses, Advantages, Disadvantages, Types and sources; Primary Data Collection: Observation method, Focus Group Discussion, Personal Interview method – Difference Between Questionnaire and

Interview Schedule.

Data Processing: Data Editing- Field Editing, Centralized in house editing; Coding- Coding Closed ended structured Questions, Coding open ended structured Questions; Classification and Tabulation of Data.

UNIT IV SAMPLING (18hrs)

Sample Vs Census, Sampling Vs Non Sampling error; Sampling Design- Probability and Non Probability Sampling design; Determination of Sample size- Sample size for estimating population mean, Determination of sample size for estimating the population proportion.

UNIT V RESEARCH REPORT (18hrs)

Research Report Writing: Types of research reports – Brief reports and Detailed reports; Report writing: Structure of the research report- Preliminary section, Main report, Interpretations of Results and Suggested Recommendations; Report

ADDITIONAL EXERCISE

One day session on SPSS- Introduction and important methods of data analysis through SPSS.

TEXT BOOKS:

S.NO	AUTHOR	TITLE OF THE BOOK	PUBLISHER	YEAR OF PUBLICATION
1	Kothari.C.R.	Research Methodology	New Age International Publisher New Delhi	2018

REFERENCE BOOKS:

S.NO	AUTHOR	TITLE	PUBLISHER	YEAR OF PUBLICATION
1	Gupta,S.P	Statistical Methods	Sultan Chand and Sons New Delhi	2014
2	Wilkinson. T.S & Bhandarkar. P.L.	Methodology and Techniques of social research	Himalaya Publishing House Mumbai	2019
3	Panneerselvam. R.	Research Methodology	Prentice Hall of India, New Delhi	2014
4	Green, P.E.	Research for Marketing Decisions	Prentice-Hall of India, New Delhi	2019

TEACHING METHODOLOGY:

- Class room teaching
- Discussions

- PPT Presentations
- Chalk & Board

WEBSITE SOURCES:

- www.tutorsindia.com
- www.springer.com
- www.authorstream.com
- www.socialpsychology.org

SYLLABUS DESIGNERS:

- Dr.K. Vinithi, Assistant Professor of Commerce.
- Dr.J. Subetha, Assistant Professor of Commerce.

RESEARCH METHODOLOGY

Sem	Subject code	Category	Lecture		Theory		Credit
			Total Hrs	Hrs per week	Total Hrs	Hrs per week	
III		Core Paper – X	90	6	90	6	5

COURSE OBJECTIVE:

1. The main objective of this course is to enable the students to understand the basic theoretical ideas
2. The logic of research and gain thorough knowledge in the development of their research projects.

COURSE OUTCOMES:

On Successful completion Of the Course the student will be able:

CO Number	CO Statement	Knowledge level(K1-K4)
CO1	To enable the students to understand the basics of Research	K2,K3
CO2	To make the students to understand to frame hypothesis and research methods	K2, K3,K4
CO3	To make them aware of scales and select sample for their projects	K1, K2, K3,K4
CO4	To know how data is collected and their types to be used for their live project	K1,K2, K3,K4
CO5	To enable the students to understand how information are processed and to know to put in sequence for their project	K1,K2, K3,K4

K1 – Remember; K2 – Understand; K3 – Apply; K4 –Analyze

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	S	S	S
CO2	S	M	S	S	S	S
CO3	M	S	S	M	S	S
CO4	S	M	S	S	S	M
CO5	S	S	S	M	S	S

S – Strong ; M – Medium; L – Low

Unit – I INTRODUCTION TO RESEARCH

20 Hours

Research : Concept – Objectives – Significance – Research Process – Types of Research - Factors for Successful Research – Problems of Research in India – Selecting and identifying a Research Problem – Steps and techniques involved in Selecting a Research Problem. Research Design – Features – Important Concepts – Types of Research Design – Types of Experimental Design – A Model of Research Design – Factors Affecting Research Design - Phases of Business Research.

Unit – II RESEARCH METHODS AND HYPOTHESIS

15 Hours

Research Methods : Historical – Field Survey – Case Study – Experimental Method – Difference between Case Study and Field Survey. **Hypothesis** : Concept – Characteristics – Need – formulation - Sources – Testing – Types – Criteria of a good Hypothesis .

Unit – III SAMPLING METHODS

20 Hours

Scaling : Scaling techniques – Types. **Sample** :- Concept – Sampling Design – Population – Pilot Study – Pre – Testing – Characteristics - Criteria of a Selecting a Sample – Merits and Demerits of Sampling - Factors affecting in selecting a Sample – **Sampling methods**: Types of Sampling Methods – Probability Sampling Methods – Non – Probability Sampling Methods

Unit – IV DATA COLLECTION METHODS**20 Hours**

Data collection methods : Types – Primary Data – Interview –Types – Success factors – Merits and Demerits Observation – Types - Success factors – Merits and Demerits - Questionnaire – Guidelines – Merits and Demerits - Schedule – Uses - Merits and Demerits – Difference between Questionnaire and Schedule – Secondary Data – Problems – Other types of Data Collection.

Unit – V REPORT AND JOURNAL WRITING**15 Hours**

Processing of Data : Editing – Coding – Tabulation – Classification - Interpretation – Concept – Need – Pre-requisite of good Interpretation – Problems. **Report Writing** : Concept – Features – Pre-requisites – Types – Layout – Mechanics – Footnote – Quotations – Bibliography – Appendices.

Journal Writing : Structure – Content – Style – Format – Abstract

Distribution of marks: Theory 100% and problem 0%

Text Books :

Sl no	Authors	Title	Publishers	Year of publications
1.	C.R. Kothari	Research Methodology	Sultan Chand and Sons	2010
2.	O.R. Krishna Murthy O.R. Rangasamy	Research In Social Science	Himalaya Publications	2005

REFERENCE BOOKS:

S.N O	Authors	Title	Publishers	Year of publicat ion
1	Donald R.Cooper and Pamela S. Schindler	Business Research Methods	Irwin McGRAW- HILL International Editions	2000
2	S N Murthy & U Bhojanna	Business Research Methods	Excel Books New Delhi	1998
3	R. Paneer Selvan	Research Methodology	Prentice Hall of India	2002

TEACHING METHODOLOGY:

1. Chalk & Talk
2. Lecture
3. Seminar
4. Assignment
5. Chart preparation
6. PPT
7. Group Discussion
8. You tube class
9. Case study
10. Role play

SYLLABUS DESIGNER:

A.Rama , Assistant Professor, Department of Management Studies, D.K.M College for Women

SKILL BASED SUBJECT - IV : BUSINESS ETHICS

Sem	Subject code	Category	Lecture		Theory		Credit
			Total Hrs	Hrs per week	Total Hrs	Hrs per week	
VI		Skill based subject-IV	30	2	30	2	2

COURSE OBJECTIVE:

To understand the importance of ethics in business and to acquire knowledge, capability to develop ethical practices for effective management.

COURSE OUTCOMES:

On Successful completion Of the Course the student will be able:

CO Number	CO STATEMENT	Knowledge level (K1-K4)
CO1	To understand the nature of business ethics	K1
CO2	To develop skills of ethical decision making	K1
CO3	To be familiar with and manage ethics	K2
CO4	To develop skills of ethics in marketing and operations management	K2
CO5	To identify with the ethics in global business	K2

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	M	S	S	S	S	M
CO2	M	S	S	S	M	S
CO3	S	S	M	S	S	S
CO4	S	S	M	M	S	M
CO5	S	M	S	S	M	S

S – Strong; M – Medium; L – Low

UNIT-I Introduction to Business Ethics

6 Hours

Nature of Business ethics: Definition - Ethics in management - Ethics in business - Nature of business ethics and values - Importance of ethics in business - Factors influencing business ethics - Ethical values in Gita - Ethical dimensions of Gandhi.

UNIT-II Ethical Decision Making

6 Hours

Attitudes and beliefs: Decision process of groups - Market forces - Environmental ethics. **Business ethics and society:** Society expectations from business - Ethical issues in Terrorism- Technology revolution and ethics - silent saboteurs.

UNIT-III Managing Ethics**6 Hours**

Building a value system: Code of ethics - Building a value system - setting standards from top- Masculine and feminine values - Ethics committees - Hot line - Ombudsman- Ethics audits and bench marking.

UNIT- IV Ethics in commercial and operations Management 6 Hours

Ethics in marketing : Consumer rights - Unethical practices in marketing - product related issues - Ethics in Advertising - Industrial espionage - Black marketing and hoarding - Bribery and corruption.

UNIT- V Ethics in HRM**6 Hours**

Ethics in HRM : Discrimination - Race and disability - Whistle blowing- CSR- Implementation of CSR - Foreign bribery- Avoiding sanctions - Ethical concerns in E-commerce- Ethical issues in BPO - Ethical concerns of BT - Ethics in pharma sector.

Distribution of marks: Theory 100% and problem 0%

TEXT BOOKS:

S.NO	Authors	Title	Publishers	Year of publication
1	R.V.Badi & N.V.Badi	Business ethics	Vrinda Publication(p) ltd	2005

2	David J. Fritzsche	Business Ethics: A Global & Management Perspective	Tata McGrawHill	1998
3	Ramaswamy Namakumari	Strategic Planning - Corporate Strategy	MacMillan India Ltd	1994

REFERENCE BOOKS:

S.NO	Authors	Title	Publishers	Year of publication
1	Laura P. Hartman	Perspectives in Business Ethics	Tata McGraw-Hill, 2nd Edition	2007
2	Peter Madsen & Jay M. Shafritz	Essential of Business Ethics	Meridian, New Delhi	1990
3	Ken Smith and Phil Johnson	Business Ethics and Business Behavior	Cengage Learning EMEA	1996
4	CSV Murthy	Business ethics, text and cases	Himalaya publishing house	2006
5	Sathish Modh	Ethical Management	Macmillan	2006
6	B.P Banerjee	Foundations of Ethics and Management	Excel books	2005

TEACHING METHODOLOGY :

- 1.Chalk & Talk
2. Lecture
3. Seminar

4. Assignment
5. Chart preparation
6. PPT
7. Group Discussion
8. You tube class
9. Case study
10. Role play

SYLLABUS DESIGNER:

Mrs. A.Kalaiselvi, Assistant Professor, Department of Management Studies, D.K.M
College for Women.

CORE – X

RESEARCH METHODOLOGY

Semester	Subject code	Category	Lecture		Theory		Practical		Credit
			Total hrs	Hrs/week	Total hrs	Hrs/week	Total hrs	Hrs/week	
IV		Core	90	6	90	6	0	0	6

COURSE OBJECTIVES

To enable the students to understand Research Methodology

COURSE OUTCOMES

On the successful completion of the course, students will be able to understand the key things about research

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	To understand the meaning of research and research process	K2
CO2	To analyze the importance of Review of Literature and role of computers in research	K4
CO3	To understand the significance of literature citations	K2
CO4	To understand the skill of writing a research report	K2
CO5	To apply the knowledge of computer in typing and formatting of a research report.	K3

MAPPING WITH PROGRAMME OUTCOMES:

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	M	M	M	M	M	M
CO2	M	M	M	M	M	M
CO3	M	M	M	M	M	M
CO4	M	M	M	M	M	M
CO5	M	M	M	M	M	M

S- Strong; M- Medium; L- Low

Unit -I: Research methodology; An Introduction**(18 Hrs)**

Meaning of research- Objectives of research- Motivation in research, Types of research- Basic and Applied research – Essential steps in research; Research process- Criteria of good research.

Unit-II: Review of Literature**(18 Hrs)**

Review of Literature – Need for Review of Literature - Research reading – consulting source material – Bibliography – index cards and reference cards. Role of computers in biological research, Plagiarism.

Unit- III: Literature Citations**(18 Hrs)**

Literature Citations; Different systems of Citing Reference – Name-Year System-Citation in the text, Name-Year System-List of References; Citation – Sequence System; Alphabet-Number System; Journal Abbreviations,

Unit- IV: Research Report**(18 Hrs)**

Introduction, Components of research report – Title – Authors & addresses – Abstract – Summary – Synopsis – Keywords – Introduction – Materials & Methods – Results – Discussion – Acknowledgements – General Introduction and General Discussion – Summary and Conclusions – Appendixes – References,

Unit-V: Research Formatting and Typing**(18 Hrs)**

Introduction – Paper – Margins – Paragraph indentations – Widow & Orphan lines – Spacing – Alignment – Hyphenation – Fonts – Pagination, Format of a thesis – Title page – Certificate page – Declaration page – Acknowledgement page – Table of contents – Abstract page – List of Tables – Figures –Abbreviations & symbols – Chapters – Quotations – Table – Summary – Appendixes – References – Figures.

DISTRIBUTION OF MARKS: Theory - 100% and Problems – Nil

TEACHING METHODOLOGY:

- ❖ Lectures
- ❖ Power point presentation
- ❖ Charts
- ❖ Models
- ❖ Group discussion
- ❖ Group assignments

TEXT BOOKS:

SL NO:	BOOK NAME	AUTHOR	PUBLISHER	YEAR OF PUBLICAT ION
01	Research Methodology and Statistical Techniques	Santosh Gupta	Laurier Books, Limited	2002
02	Research Methodology: For Biological Sciences	N Gurumani	MJP Publishers	2019
03	Introduction to Computers	Alexis Leon, Mathews Leon	VIKAS PUBLISHING	2009

REFERENCE BOOKS:

SL NO:	BOOK NAME	AUTHOR	PUBLISHER	YEAR OF PUBLICAT ION
01	Research methodology	C.R. Kothari	New Age International Publishers	2004
02	Research methodology	P. Saravanel	Kitab Mahal Distributors	2015
03	How to write and publish a scientific paper.	Robert A. Day and Barbara Gastel	Cambridge University Press	2012
04	Thesis and Assignment Writing - 3rd Edition	Jonathan Anderson, Millicent Poole	John Wiley & Sons Inc	1998

WEB REFERENCE:

<https://www.bookdepository.com>

<https://www.researchgate.net>

<https://www.scribd.com>

<https://bbamantra.com> › research-methodology

SYLLABUS DESIGNER:

1. Dr.J.Hemapriya, Assistant Professor
2. Dr. A.Vidhya HOD & Assistant Professor

RESEARCH METHODOLOGY AND BIostatISTICS

Sem	Subject Code	Category	Lecture		Theory		Practicals	Credit
			Hrs/sem	Hrs/Per week	Hrs/sem	Hrs/Per week		
III		Core paper IX					-----	4
			90	6	90	6		

COURSE OBJECTIVE:

- 1) To understand the significance of statistics and research methodology in research.
- 2) To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.
- 3) To apply the appropriate statistical technique for the measurement scale and design.

COURSE OUTCOMES

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	Introducing the basic methods of Research Methods	k2
CO2	To learn how to write a research proposal and review literature	k2, k3
CO3	Learning about sampling and data representation	k2, k3
CO4	Understanding the importance Biostatistics in Research	k2, k3, k4
CO5	To understand how ethics are important in research	K1, k2, k3

Knowledge level: K1 – Remember, K2-Understand, K3- Apply, K4-Analyse.

MAPPING WITH PO

COS	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	M
CO2	M	M	S	S	S
CO3	M	M	S	M	S
CO4	M	M	S	M	S
CO5	M	M	S	M	M

S-Strong; M-Medium, L- Low

UNIT I

18 HRS

INTRODUCTION TO RESEARCH METHODOLOGY

- A) Research- Meaning, purpose, approaches and Types of Research.
- B) Research Designs –Experimental and Observational; Quantitative and Qualitative approaches.
- C) The Research Process - Defining the problem; research questions; objectives. Concepts of Hypothesis - Null, Alternative Hypothesis, Type I and type II errors.

UNIT II

18 HRS

PROPOSAL WRITING AND LITERATURE REVIEW

- A) Framing Proposal for acquiring grants: The question to be addressed – Rationale and importance of the question being addressed – Empirical and theoretical framework – Presenting pilot study / data or background information - Research proposal and time frame – Specificity of methodology – Organization of different phases of study – Expected outcome of study and its implications – Budgeting - Available infrastructure and resources - Executive summary
- B) Review of related literature and originality in writing; Citation formats: in medical sciences, social sciences; Issues of academic fraud and plagiarism, conflicts of interest, authorship and publication

UNIT III

18 HRS

SAMPLING AND DATA REPRESENTATION

- A) Sampling & Tools - Role of sampling in research; Types of sampling; Research Tools and Techniques Validity and reliability; Interviewing and observational methods
- B) Representation of Data - Graphical and Diagrammatic Presentation of Data (Bar diagrams, Pie-diagram, Histogram, Frequency Polygon, Smoothed frequency curve and Ogives). Tabulation and Classification. Frequency Distribution.

18 HRS

UNIT IV

BIostatistics ANALYSIS

- A) Introduction to Bio statistics – Meaning and its scope; Parameter and Statistics; types of statistical data; Measures of central tendencies – Mean, Median and Mode: Measures of dispersion – Range, Quartile deviation, standard deviation, Skewness and Kurtosis; Probability – Definition, Axioms of Probability; Addition and Multiplication theorem.
- B) Elementary Probability Theory – Addition and Multiplication – Bayes Theorem – Random Variables and Probability distribution- Binomial, Poisson, and Normal. Study of relationship between variables – correlation: Simple, Partial, Multiple Correlation (three variables); Regression – Simple, Multiple (three Variables). Measures of association – Chi square test for goodness of fit & contingency table.
- C) Sampling Distribution Standard error t & F distribution: t test based on single samples, two sample mean, paired samples, F test two sample variances, F test for several mean (One way ANOVA only). Z-test for proportion – One sample, two sample; Computer Applications Software - MS EXCEL – SPSS in Data Analysis

ETHICS IN RESEARCH

Ethics and Politics of Research - Identify, define, and analyze ethical issues in the context of human subject research. Reasons for conducting ethical review of research, theories and concepts related to ethical decision-making including consequentialism, deontology, respect, dignity, discourse ethics, communitarianism, liberalism and the four principles approach. Ethical importance of consent, privacy and confidentiality in research.

Distribution of Marks: Theory – 25 (IA) + 75 (univ. exam) = 100 Marks

TEXT BOOKS:

S.NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1	Kothari C R	Research Methodology: Methods and Techniques (2nd ed.)	New Age International Publishers, New Delhi, India. Ltd., Ramnagar, Delhi.	2008
2	Copper, H.M.	Intergrating research : A guide for literature reviews (2nd Edition)	Sage Publications, California	2002
3	Harman, E & Montages, I.	The thesis and the book	New Delhi : Vistar.	2007
4	Argyrous, G	Statistics for Social and Health Research	London: Sage	2000
5	Bernard, H.R.	Social Research Methods: Qualitative and Quantitative Approaches	Thousand Oaks, Ca: Sage	2000
6	Mujis, D.	Doing Quantitative Research in Education with SPSS.	London: Sage	2004

REFERENCE BOOKS:

S.NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1	Agrawal C. , Joshi S.P.	Communication	Nawray Rai	

	and Sinha A	Research and development, The ISRO Experience, new Delhi	concept Pub. Co.	
2	Bhattacharya DK	Research Methodology	Anurag Jain for excel books, New Delhi, India	2004
3	Fowler FJ	Survey Research Methods (3rd ed.)	Sage Publications, Newbury Park	2001
4	Patton Q.M	Qualitative evaluation and Research methods	sage Pub.,	1990
5	Ratnapala N	New Horizons in Research methodology	Sri Lanka	1993
6	Stranss, A and Corbin, J.	Basis of Qualitative Research: Grounded Theory Procedures and Techniques	Sage Publications, California	1990
7	Gupta S.C. and Kapodi V.R.	Fundamentals of Applied Statistics	New Publications Ltd.	1990
8	Bandarkar, P.L. and Wilkinson T.S.	Methodology and Techniques of Social Research	Himalaya Publishing House, Mumbai	2000

WEB SOURCES:

1. Sample Size Calculator - <https://www.calculator.net/sample-size-calculator.html?type=1&cl=99.999&ci=5&pp=20&ps=1000&x=80&y=14>
2. <https://www.surveymonkey.com/mp/sample-size-calculator/>
3. Sample Error Calculator - <https://www.dssresearch.com/resources/calculators/sample-error-calculator/>
4. <https://www.youtube.com/channel/UCHpq07udPyomX9EpMkvjKqg/about>

TEACHING METHODOLOGY

- A) Chalk and board teaching
- B) Study Assignment method
- C) Active learning method
- D) Group discussions
- E) PPT

RESEARCH AND STATISTICS IN PSYCHOLOGY

Semester	Subject Code	Category	Lecture		Theory		Practical	Credit
			Hrs/Week	Hrs/Sem	Hrs/Week	Hrs/Sem		
I	19CAPS1A	Core	06	90	05	75	15	05

COURSE OBJECTIVE

This course gives an understanding of various statistical techniques in terms of their assumptions, interpretation and applications.

COURSE OUTCOMES

On successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	Recall the basics of research	K1-Remember
CO2	Discover the methods of data collection in order to make use of it during further studies.	K3- Apply
CO3	Recall the functions, scope and limitations of statistics	K1-Remember
CO4	Do quantitative analysis and graphically represent the data.	K3- Apply
CO5	Prepare normal curve and also to find correlation between two variables.	K3- Apply

Mapping with Programme Outcomes

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	M	M	M	M
CO2	S	S	S	S	M	M
CO3	S	S	S	S	S	S
CO4	S	S	S	S	S	S
CO5	S	S	S	S	S	S

S- Strong M-Medium L-Low

UNIT-I (15 HOURS)

INTRODUCTION TO RESEARCH - (Theory)

Meaning- Definition- Objectives- Types of research- Characteristics of research-Steps in research process- Criteria of good research-Research problem- techniques involved in defining a research problem.

UNIT-II (15 HOURS)

SAMPLING - (Theory)

Population and Sample- Types of sampling: Probability and non probability sample- Sources of data collection- Scales of measurement.

UNIT-III (20 HOURS)

INTRODUCTION TO STATISTICS - (Theory)

Meaning of statistics- Definition-Functions and limitations of statistics –Discrete and continuous variables- Descriptive and inferential statistics.

UNIT-IV – (Theory and practical sums) (20 HOURS)

GRAPHICAL REPRESENTATIONS OF DATA AND QUANTITATIVE ANALYSIS

Grouped data: Frequency graphs: Histograms, Frequency polygon, Frequency distribution- Cumulative frequency- *Ungrouped data:* Types of diagram: Bar diagram- types of bar diagram- Pie diagram- merits and demerits of diagrams.

Quantitative Analysis: Measures of central tendency: Mean-Median-Mode.

Measures of Variability: Range- Standard deviation.

UNIT-V– (Theory and practical sums) (20 HOURS)

NORMAL CURVE (Theory) AND CORRELATION (Theory and Sums)

The Normal Distribution- Properties of the Normal Curve- Importance of Normal Distribution- Application in NPC.

Correlation: Meaning and its types- Scatter diagram-Karl Pearson Coefficient of correlation- Spearman's rank correlation.

Practicum: Students have to carry out a practical based on methods of data collection.

Practicum Activities:

- Designing of questionnaire
- Data collection methods- interview, observation, questionnaire and other methods
- Data collection through Google forms.

Distribution of Marks: Theory 75% and Problems 25%

TEXT BOOKS:

S.No	Authors	Title	Publishers	Year Of Publication
01	Arthur Aron, Elaine N. Aron, Elliot, J. Coups	Statistics for Psychology, 4 th edition	New Delhi: Pearson Education Inc	2006
02	S.K. Mangal	Statistics in Psychology and education, 2 nd edition	New Delhi: Prentice-Hall of India.	2002
03	C.R. Kothari & Gaurav Garg	Research Methodology methods and techniques, 3 rd edition	New Age International Publishers	2014

REFERENCE BOOKS:

S.No	Authors	Title	Publishers	Year Of Publication
01	Gupta, S.P	Statistical methods	New Delhi: Sultan Chand and sons	2002
02	Frederick, J. Gravetter & Larry, B. Walluan	Essentials of Statistics for the Behavioural sciences, 2 nd edition	New York : West Publishing company	1993

WEB SOURCES:

- <https://www.udemy.com/introductory-statistics-part1-descriptive-statistics/>
- <https://www.edx.org/course/introduction-statistics-descriptive-uc-berkeleyx-stat2-1x>
- <https://www.udemy.com/statistics-for-psychology/>
- <https://sol.du.ac.in/mod/book/view.php?id=1317>
- <https://www.cliffsnotes.com/study-guides/statistics/sampling/populations-samples-parameters-and-statistics>
- <http://itfeature.com/statistics/primary-and-secondary-data-in-statistics>
- <https://econtutorials.com/blog/types-frequency-distribution/>

- <https://statistics.laerd.com/statistical-guides/measures-central-tendency-mean-mode-median.php>
- <https://stattrek.com/descriptive-statistics/variability.aspx>
- <http://www.modares.ac.ir/uploads/Agr.Oth.Lib.17.pdf>

TEACHING METHODOLOGIES:

- Group test
- Assignments
- Model preparation
- Peer tutoring
- Seminar.

SYLLABUS DESIGNERS:

01. Mrs.R.Safina Selva

Head and Assistant Professor of Psychology

DKM College for Women (Autonomous).

02.Ms.Aarthi.D

Assistant Professor of Psychology

DKM College for Women (Autonomous).

PRACTICAL –VI
RESEARCH METHODOLOGY, BIostatISTICS AND ENTOMOLOGY

Semester	Subject Code	Category	Practical		Theory	Practical	Credit
			Hrs/ week	Total Hours/ Semester			
IV	19CPZ043	Core Practical-VI	4	60	Nil	60	4

OBJECTIVES:

- To understand and observed the principle and application of the instruments.
- To understand the principles and methods of various instruments used in biology.
- It helps to acquire knowledge on the Computer aided techniques for data analysis(SPSS)
- To imbibe the knowledge and analysis of biological data.
- To comprehend the morphology of insects, morphology of silworm, digestive system, nervous system, mounting of silk glands and study of silkworm pathology.
- It helps to acquire knowledge on the Preparation of Insect Box.

RESEARCH METHODOLOGY AND BIostatISTICS (20Hrs)

1. Spectrophotometric estimation of any biological constituent.
2. Electrophoresis - Paper / Agarose gel / PAGE
3. Computer aided techniques for data analysis (SPSS)
4. Problems relating to test of significance (Chi - square test and t - test)
5. Problems relating to correlation, regression and ANOVA.

ENTOMOLOGY (40Hrs)

1. Study of morphology of an insect (local insects to be used)
2. Study of external morphology of silkworm moth, larvae and pupae.
3. Dissections of digestive and nervous systems in Bombyxmori larvae.
4. Mounting of Silk glands of Silkworm.
5. Study of silkworm pathology: viral - bacterial - fungal diseases (Field visit - Slides/Specimens /Xerox)
6. a. Field study to collect insect species
b. Identification of at least 10 insects belonging to different orders.
7. a. Field study for various methods of pest management.
b. Field visit to ware houses and Plant protection centers.
8. Insect Box Preparation.

SYLLABUS DESIGNERS

Dr. K. Devi, Former HOD & Associate Professor

Dr D.Sasikala, Assistant Professor &HOD

Dr V.Rekha, Assistant Professor

Dr. S. Vijayakumari, Assistant Professor

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