



THE ASSAM
ROYAL GLOBAL UNIVERSITY
— GUWAHATI —

Course Structure & Syllabus

For PhD programme

Paper – I & II

Cluster 1
(RSHSS, RSL, RSCOM, RSFA, RSLA, RSBAS,
RSLIS)

WEF AY 2024-25

Course: Research Methodology**Subject Code: RMP995M101****L-T-P-C – 3-1-0-4****Credit Units: 04****Scheme of Evaluation: T****Course Objective:**

The primary objective of the course is to provide students with a comprehensive understanding of the research process and equip them with the knowledge and skills necessary to conduct rigorous and ethical research in their chosen field of study. Students will learn about various research methods, including quantitative, qualitative, and mixed-method approaches, and how to select and apply the most appropriate methods to address research questions. They will develop critical thinking skills to evaluate existing literature, design research studies, collect and analyse data, and interpret findings. The course aims to instil an understanding of ethical considerations in research and prepare students to effectively communicate their research findings through academic writing and presentations.

Course Outcome:**On successful completion of the course the scholars will be able to:**

SI No	Course Outcome	Blooms Taxonomy Level
CO 1	Define the basic terminologies of Research Methodology	BT 1
CO 2	Interpret the basic concepts of Research	BT 2
CO 3	Apply the concept of research methodology in defining research problem and design	BT 3
CO 4	Analyze and process data through different data collection techniques	BT 4
CO 5	Appraise the process of executing good research through suitable interpretation	BT 5
CO 6	Compile the suitable techniques to write a good research report	BT 6

Detailed Syllabus:

Module	Course Content	Periods
I	Introduction to Research Methodology <ul style="list-style-type: none"> • Meaning, Motivation & Objectives of Research • Steps of Research: Classification of Research and Research Approaches • Significance of Research, Research Methods versus Methodology 	12

Module	Course Content	Periods
II	Defining the Research Problem: <ul style="list-style-type: none"> • Research Problem and its selection • Problematisation of Research area. • Framing of Objectives and Research Questions • Techniques of Literature Review • Research Designing • Synopsis writing • Census and Sample Survey, Sampling design, its Classification, Scaling and its Classification, Measurement in Research, measurement scales, Measurement Tools. 	18
III	Data Collection Methods <ul style="list-style-type: none"> • Sources: Primary and Secondary • Methods of data collection: Field work, archival, Interview, Questionnaire, case study method, Quantitative method, Qualitative method, Ethnographic Methods, Textual/ Literary source. Processing and Analysis of Data/sources: <ul style="list-style-type: none"> • Types of Analysis, Processing Operations, Content Analysis, internal and external criticism, corroboration method, counter factual method. Statistics in Research <ul style="list-style-type: none"> • Measures of Central Tendency, • Dispersion, Asymmetry (Skewness), Relationship, • Simple Regression Analysis, Correlation and Regression. 	18
IV	Report Writing <ul style="list-style-type: none"> • Interpretation of Data/sources, use language, use of subject specific concepts and theories in interpretation. • Mechanics of Writing a Research Report • referencing (MLA, Chicago, Havard and so on according to the requirement of the subject) • Bibliography Preparation 	12
Total		60

Textbooks:

1. Kothari CR & Garg Gaurav (2024). *Research Methodology- Methods and Techniques*, 5th Edition, New Age International (P) Limited, Publishers, New Delhi.
2. Chawla, D. & Sondhi, N. (2015). *Research Methodology-Concepts and Cases*, 2nd Edition. Noida: Vikash Publishing House.

Reference Books:

1. Verma, S. K. and Wani, M. A. (2001). *Legal Research and Methodology*. New Delhi: Indian Law Institute,
2. Malhotra, N. K. & Dash, S. (2012). *Marketing Research: An applied Orientation*. 6th Edition. Noida: Pearson Publications.
3. *Concise Rules of APA Style*. (2010). American Psychological Association. Language, Arts and Disciplines.
4. *The Chicago Manual of Style*. (2003). University of Chicago Press

Course: Computer Applications, Research & Publication Ethics Subject Code: CAR995M102

L-T-P-C - 2-1-2-4

Credit Units: 04

Scheme of Evaluation: T&P

Course Objectives:

To provide students with a comprehensive understanding of ethical principles and practices of computer science research and academic publishing and explore ethical considerations specific to computer applications, including issues related to data privacy, cybersecurity, intellectual property rights, and responsible conduct of research in computational settings. The students will learn about the importance of transparency, integrity, and reproducibility in research, as well as best practices for authorship, peer review, and publication ethics and aims to foster a culture of ethical awareness and responsibility among future computer science professionals and researchers.

Course Outcomes:

On successful completion of the course the scholars will be able to:

SI No	Course Outcome	Blooms Taxonomy Level
CO 1	Define the basic terminologies of Computer Applications Research & Publication Ethics	BT 1
CO 2	Interpret the basic concepts of computer applications in research	BT 2
CO 3	Apply the concept of computer algorithms in defining research problem and design	BT 3
CO 4	Examine and apply the knowledge of philosophy & Ethics in research	BT 4
CO 5	Appraise on the different process of Research Publication, calculation and presentation tools	BT 5
CO 6	Adapt suitable techniques to write a good research report	BT 6

Detailed Syllabus:

Module	Course Contents	Periods
I	The computer: Its Role in Research <ul style="list-style-type: none">• The Computer and Computer Technology• The Computer System and Important Characteristics• The Binary Number System• Computer Applications:• UGC INFONET, INFLIBNET and ERNET, role of computer in research	15
II	Research Publication, calculation and presentation tool: <ul style="list-style-type: none">• Word, Excel & PowerPoint, Data analysis software: SPSS.• Databases and Research matrices:• Indexing databases,• Citation databases: web of science, Scopus, Indian Citation Index• Research Matrices:• Impact Factor of Journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score, Metrics: h-index, g index, i10 index, altmetric.	12

Module	Course Contents	Periods
III	Introduction to philosophy & Ethics: <ul style="list-style-type: none"> Philosophy: Definition, nature and scope. Philosophy in research. Ethics: Definition, moral judgements, moral judgement in social scienced research, Role of Ethics with respect to science and research 	18
IV	Publication, Ethics & Practices: <ul style="list-style-type: none"> Introduction to publication, Publication as testing research findings, Publication as circulation and dissemination of knowledge, Publication as filling the gaps in the body of knowledge. Best Practices / Standards setting and guidelines: COPE, WAVE, etc Conflicts of Interest Publication misconduct: Definition, concept, problems that led to unethical behaviour and vice versa, types of violation of publication ethics, authorship and contributorship Identification of publication misconduct, complaints and appeals Predatory publishers and journals 	15
Total		60

Textbooks/References

1. Fundamentals of Computers by E Balaguruswami (McGraw Hill Publication)
2. Handbook of Computer Programming With Python, Christos Manolas, Dimitrios, Xanthidis, Han-I Wang,
3. Laboratory Experiments with C-Language By Anupam Das (BOOKLAND Publication)
4. Programming in ANSI C By E Balaguruswami (McGraw Hill Publication)
5. Microsoft Office System 2012 edition (PHI publication)
6. Kothari CR & Garg Gaurav (2024). *Research Methodology- Methods and Techniques*, 5th Edition, New Age International (P) Limited, Publishers, New Delhi.
7. Chawla, D. & Sondhi, N. (2015). *Research Methodology-Concepts and Cases*, 2nd Edition. Noida: Vikash Publishing House.
8. Python Programming, 2nd Edition Paperback – 2 January 2023, Reema Thareja



THE ASSAM
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— GUWAHATI —

Course Structure & Syllabus

For PhD programme

Paper – I & II

Cluster 2
(RSET, RSIT, RSBSC, RSLSC, RSAPS, RSP, RSA,
RSD, RSEES, RSN, RSMAS)

WEF AY 2024-25

Course: Research Methodology**Subject Code: RMP995M101****L-T-P-C - 3-1-0-4****Credit Units: 04****Scheme of Evaluation: T****Course Objective:**

The primary objective of the course is to provide students with a comprehensive understanding of the research process and equip them with the knowledge and skills necessary to conduct rigorous and ethical research in their chosen field of study. Students will learn about various research methods, including quantitative, qualitative, and mixed-method approaches, and how to select and apply the most appropriate methods to address research questions. They will develop critical thinking skills to evaluate existing literature, design research studies, collect and analyze data, and interpret findings. The course aims to instill an understanding of ethical considerations in research and prepare students to effectively communicate their research findings through academic writing and presentations.

Course Outcome:

On successful completion of the course the scholars will be able to:		
SI No	Course Outcome	Blooms Taxonomy Level
CO 1	Define the basic terminologies of Research Methodology	BT 1
CO 2	Interpret the basic concepts of Research	BT 2
CO 3	Apply the concept of research methodology in defining research problem and design	BT 3
CO 4	Analyze and process data through different data collection techniques	BT 4
CO 5	Appraise the process of executing good research through suitable interpretation	BT 5
CO 6	Compile the suitable techniques to write a good research report	BT 6

Detailed Syllabus:

Module	Course Content	Periods
I	<p>Introduction to Research Methodology:</p> <ul style="list-style-type: none"> • Meaning, Motivation & Objectives of Research • Classification of Research and Research Approaches • Significance of Research, Research Methods versus Methodology • Research Process • Problems Encountered by Researchers • Defining Research Problem • Need and Techniques of defining the Problem <p>Research Design:</p> <ul style="list-style-type: none"> • Meaning and need of Research Design • Need for Research Design & Features of a good design • Classification of Research Design and important concepts relating to research design • Basic Principles of experimental designs 	15

Module	Course Content	Periods
II	<p>Sampling Design:</p> <ul style="list-style-type: none"> • Census and Sample Survey, implications of a Sample Design • Steps in sampling design • Criteria of selecting a Sampling Procedure, characteristics of a good Sample Design and its classification <p>Measurement and Scaling Techniques:</p> <ul style="list-style-type: none"> • Measurement in Research and measurement scales • Sources of error in measurement • Developing Measurement Tools • Meaning of Scaling, Scale Classification bases • Important Scaling Techniques 	15
III	<p>Data Collection Methods:</p> <ul style="list-style-type: none"> • Collection of Primary Data and Observation Method • Interview Method and Collection of Data through Questionnaires • Collection of Data through Schedules • Collection of Secondary Data • Selection of Appropriate Method for Data Collection • Case Study Method <p>Processing and Analysis of Data:</p> <ul style="list-style-type: none"> • Processing Operations • Types of Analysis • Statistics in Research - Measures of Central Tendency, Dispersion, Asymmetry (Skewness), Relationship, Simple Regression Analysis, Multiple Correlation and Regression, Partial Correlation, index numbers, Time Series analysis 	18
IV	<p>Interpretation and Report Writing</p> <ul style="list-style-type: none"> • Meaning of Interpretation and its need • Technique of Interpretation and its Precaution • Significance and different Steps in Writing Report • Layout of the Research Report and classification • Oral Presentation • Mechanics of Writing a Research Report and Precautions • Bibliography and referencing 	12
Total		60

Textbooks:

1. Kothari CR & Garg Gaurav (2024). *Research Methodology- Methods and Techniques*, 5th Edition, New Age International (P) Limited, Publishers, New Delhi.
2. Chawla, D. & Sondhi, N. (2015). *Research Methodology-Concepts and Cases*, 2nd Edition. Noida: Vikash Publishing House.

Reference Books:

1. Verma, S. K. and Wani, M. A. (2001). *Legal Research and Methodology*. New Delhi: Indian Law Institute,
2. Malhotra, N. K. & Dash, S. (2012). *Marketing Research: An applied Orientation*. 6th Edition. Noida: Pearson Publications.
3. *Concise Rules of APA Style*. (2010). American Psychological Association. Language, Arts and Disciplines.
4. *The Chicago Manual of Style*. (2003). University of Chicago Press

Course: Computer Applications Research & Publication Ethics**Subject Code: CAR995M102****L-T-P-C - 2-1-2-4****Credit Units: 04****Scheme of Evaluation: T&P****Course Objectives:**

To provide students with a comprehensive understanding of ethical principles and practices of computer science research and academic publishing and explore ethical considerations specific to computer applications, including issues related to data privacy, cybersecurity, intellectual property rights, and responsible conduct of research in computational settings. The students will learn about the importance of transparency, integrity, and reproducibility in research, as well as best practices for authorship, peer review, and publication ethics and aims to foster a culture of ethical awareness and responsibility among future computer science professionals and researchers.

Course Outcomes:

On successful completion of the course the scholars will be able to:		
SI No	Course Outcome	Blooms Taxonomy Level
CO 1	Define the basic terminologies of Computer Applications Research & Publication Ethics	BT 1
CO 2	Interpret the basic concepts of computer applications in research	BT 2
CO 3	Apply the concept of computer algorithms in defining research problem and design	BT 3
CO 4	Examine and apply the knowledge of philosophy & Ethics in research	BT 4
CO 5	Appraise on the different process of Research Publication, calculation and presentation tools	BT 5
CO 6	Adapt suitable techniques to write a good research report	BT 6

Detailed Syllabus:

Module	Course Contents	Periods
I	Computer basics : <ul style="list-style-type: none"> • Algorithm, characteristics and generation of computers components, data representation, input output units • Computer memory and its organization • UGC INFONET, INFLIBNET and ERNET, role of computer in research 	15
II	Introduction to Programming languages: <ul style="list-style-type: none"> • Compiler, interpreter, high, low and assembly language • Basics of Operating Systems & Databases • Introduction to Programming in Python 	12
III	Introduction to Philosophy & Ethics: <ul style="list-style-type: none"> • Definition, nature and scope, concept, branches • Ethics: Definition, moral philosophy, nature of moral judgements and reactions 	18

Module	Course Contents	Periods
	Scientific conduct: <ul style="list-style-type: none"> • Ethics with respect to science and research, • Intellectual honesty and research integrity, • Scientific misconducts : Falsification, Fabrication and Plagiarism, • Redundant publications: duplicate and overlapping publications, salami Slicing, selective reporting and misrepresentations of data 	
IV	Publication Ethics & Practices: <ul style="list-style-type: none"> • Definition, introduction and Importance • Best Practices / Standards setting and guidelines : COPE, WAVE, etc • Conflicts of Interest • Publication misconduct : Definition , concept, problems that led to unethical behaviour and vice versa, types of violation of publication ethics, authorship and contributorship • Identification of publication misconduct, complaints and appeals • Predatory publishers and journals Research Publication, calculation and presentation tool: <ul style="list-style-type: none"> • LaTTeX, Open Office, MS Office, Plagiarism detection software's, Data analysis software : SPSS. • Databases and Research matrices: Indexing databases, Citation databases: web of science, Scopus etc. • Research Matrices : Impact Factor of Journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score • Metrics : h-index, g index, i10 index, altmetrics 	15
	Total	60

Textbooks/Reference books: (Latest editions)

1. Fundamentals of Computers by E Balaguruswami (McGraw Hill Publication)
2. Handbook of Computer Programming With Python, Christos Manolas, Dimitrios Xanthidis, Han-I Wang,
3. Laboratory Experiments with C-Language By Anupam Das (BOOKLAND Publication)
4. Programming in ANSI C By E Balaguruswami (McGraw Hill Publication)
5. Microsoft Office System 2012 edition (PHI publication)
6. Kothari CR & Garg Gaurav (2024). *Research Methodology- Methods and Techniques*, 5th Edition, New Age International (P) Limited, Publishers, New Delhi.
7. Chawla, D. & Sondhi, N. (2015). *Research Methodology-Concepts and Cases*, 2nd Edition. Noida: Vikash Publishing House.
8. Python Programming, 2nd Edition Paperback – 2 January 2023, Reema Thareja



THE ASSAM
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Course Structure & Syllabus

For PhD programme

Paper – I & II

Cluster 3

(RSB, RSC, RSTTM, RSHM, RSFT)

WEF AY 2024-25

Course: Research Methodology

Subject Code: RMP995M101

L-T-P-C – 3-1-0-4

Credit Units: 04

Scheme of Evaluation: T

Course Objective:

The primary objective of the course is to provide students with a comprehensive understanding of the research process and equip them with necessary knowledge and skills to conduct rigorous research in their chosen field of study.

Course Outcome:

On successful completion of the course the scholars will be able to:		
SI No	Course Outcome	Blooms Taxonomy Level
CO 1	Define the concepts and terminologies of research methodology	BT1
CO 2	Understand the tools & techniques of research methodology	BT2
CO 3	Apply various research methodologies to accomplish quality research outcomes.	BT3
CO 4	Analyze research data using suitable statistical methods.	BT4
CO 5	Evaluate the research findings to resolve the research problem.	BT5
CO 6	Develop and present the research report.	BT6

Detailed Syllabus:

Module	Course Content	Periods
I	Introduction to Research Methodology <ul style="list-style-type: none">• Meaning, Motivation & Objectives of Research• Classification of Research and Research Approaches• Significance of Research, Research Methods versus Methodology• Importance of Knowing How Research is Done• Research Process and criteria of Good Research• Problems Encountered by Researchers	12
II	Defining the Research Problem: <ul style="list-style-type: none">• Research Problem and its selection.• Need and Techniques of defining the Problem. Research Design: <ul style="list-style-type: none">• Meaning, features and need of Research Design• Classification of Research Design• Basic Principles of experimental designs	18

	<p>Sampling Design</p> <ul style="list-style-type: none"> • Census and Sample Survey, implications of a Sample Design • Steps in sampling design • Criteria of selecting a Sampling Procedure, characteristics of a good Sample Design and its classification <p>Measurement and Scaling Techniques</p> <ul style="list-style-type: none"> • Measurement in Research and measurement scales • Sources of error in measurement • Developing Measurement Tools • Meaning of Scaling and Scale Classifications • Scaling Techniques 	
III	<p>Data Collection Methods</p> <ul style="list-style-type: none"> • Collection of Primary Data and Observation Method • Interview Method and Collection of Data through Questionnaires • Collection of Data through Schedules • Collection of Secondary Data • Selection of Appropriate Method for Data Collection • Case Study Method <p>Processing and Analysis of Data</p> <ul style="list-style-type: none"> • Processing Operations • Types of Analysis • Statistics in Research • Measures of Central Tendency, Dispersion, Asymmetry (Skewness), Relationship • Simple Regression Analysis, Multiple Correlation and Regression, Partial Correlation 	18
IV	<p>Interpretation and Report Writing</p> <ul style="list-style-type: none"> • Meaning of Interpretation and its need • Technique of Interpretation and its Precaution • Significance and different steps in Writing Report • Layout of the Research Report and classification • Oral Presentation • Mechanics of Writing a Research Report • Precautions for Writing Research Reports • Bibliography and referencing 	12
Total		60

Textbooks:

1. Kothari CR & Garg Gaurav (2024). *Research Methodology- Methods and Techniques*, 5th Edition, New Age International(P)Limited, Publishers, New Delhi.
2. Chawla, D.& Sondhi (2015). *Research Methodology-Concepts and Cases*, 2nd Edition, Noida: Vikash Publishing House.

Reference Books:

1. Verma, S.K. and Wani, M.A. (2001). *Legal Research and Methodology*. New Delhi: Indian Law Institute.
2. Malhotra, N.K.& Dash, S. (2012). *Marketing Research: An applied Orientation*. 6th Edition. Noida: Pearson Publications.
3. *Concise Rules of APA Style*. (2010). American Psychological Association. Language Arts and Discipline.
4. *The Chicago Manual of Style*. (2003). University of Chicago Press

Course: Computer Applications & Research Publication Ethics

Subject Code: CAR995M102

L-T-P-C - 2-1-2-4

Credit Units: 04

Scheme of Evaluation: T&P

Course Objectives:

The objective of the course is to enable the scholars to understand and apply various IT applications and publication ethics in research.

Course Outcomes:

On successful completion of the course the scholars will be able to:		
SI No	Course Outcome	Blooms Taxonomy Level
CO 1	Define the basic concepts of IT applications and publication ethics in research	BT 1
CO 2	Interpret the concepts of publication ethics in research.	BT 2
CO 3	Apply appropriate IT tools in the collection and organization of research data by following ethical publication practices	BT 3
CO 4	Analyze the research data by adapting suitable IT applications and publication ethics	BT 4
CO 5	Evaluate research output in the context of publication ethics	BT 5
CO 6	Develop a comprehensive research plan by incorporating various IT tools & applications.	BT 6

Detailed Syllabus:

Module	Course Contents	Periods
I	MS-Word-Formatting, Referencing, Citation; MS-Excel-Data entry, analysis, graphical presentation; and MS-Power Point for presentation-preparation of slides, designs & animation.	15
II	Use of SPSS and other statistical software for data analysis.	12

III	<p>Introduction to publication Database & Ethics:</p> <ul style="list-style-type: none"> • Definition, nature and scope of publication ethics. • Databases and Research metrics (UGC INFONET, INFLIBNET, ERNET, EBSCO, JSTOR, EMERALD etc.) • Indexing databases • Citation databases: web of science, Scopus etc. • Research metrics • Impact Factor of Journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score • Metrics: h-index, g index, i10 index, altimetric <p>Scientific conduct:</p> <ul style="list-style-type: none"> • Ethics with respect to science and research • Intellectual honesty and research integrity • Scientific misconducts: Falsification, Fabrication and Plagiarism • Redundant publications: duplicate and overlapping publications salami Slicing, selective reporting and misrepresentations of data. 	18
IV	<p>Publication Ethics & Practices:</p> <ul style="list-style-type: none"> • Definition, Introduction and Importance • Best Practices / Standards setting and guidelines: COPE, WAVE, etc. • Conflicts of Interest • Publication misconduct: Definition, concept, problems that led to unethical behavior and vice versa, types of violation of publication ethics, authorship, and contributorship • Publication misconduct, complaints and appeals • Predatory publishers and journals 	15
Total		60

Textbooks/Reference books:

1. Fundamentals of Computers by E Bala Guruswami (McGraw Hill Publication)
2. Programming in ANSI C By E Bala Guruswami (McGraw Hill Publication)
3. Microsoft Office System 2012 edition (PHI publication)
4. Kothari CR & Garg Gaurav (2024). *Research Methodology- Methods and Techniques*, 5th Edition, New Age International (P) Limited, Publishers, New Delhi.
5. Chawla, D. & Sondhi, N. (2015). *Research Methodology-Concepts and Cases*, 2nd Edition. Noida: Vikash Publishing House.