<table>
<tr><td colspan="2">
Paper I: Research Methodology

Credit Units: 04
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Course Objective:
The objectives of the course is
- To familiarizing scholars with the various issues involved in research and to impart an in-depth knowledge of the research process.
- To equip the scholars with the various tools used to analyze the collected data and help them in interpreting the results.

Detailed Syllabus:

Module	Course Content	Periods
I	**Introduction to Research:** Overview of Research - Meaning, Types, Objectives of Research, Research Process. Research problem identification, Literature survey, Research Design: Exploratory Research Design- Using Secondary Data, Qualitative Research, Descriptive Research Design - Survey and Observation methods, Causal Research Design - Experimentation and conditions for causality, Ethics in Research.	12
II	**Sampling & Scaling:** Sampling: Sampling Concepts, Probability and Non-Probability Sampling Designs, Sample Size Determination. Errors in Sampling Measurement and Scaling: Scales of Measurement, Comparative and Non-Comparative scaling techniques, Reliability & Validity of Scale, Questionnaire and Form Design, Fieldwork and Data Preparation	12
Group A	
III	**Data Analysis and Hypothesis Testing:** Descriptive Statistics, Inferential Statistics, Hypothesis formulation and Testing: t test- One sample, two sample, paired, Z test, F test, Analysis of Variance (ANOVA), Regression, Multiple Regression, Non- Parametric Tests-Chi-square tests, Sign tests, Mann-Whitney U Test, Normality test, Cronbach's Alpha.	14
IV	**Advanced Data Analysis:** Overview of Advanced Analysis, Factor analysis, Cluster analysis, Conjoint analysis and Multi-Dimensional Scaling. Introduction to SEM. Use of MS-Excel and SPSS in Research. Report Writing and Presentation-Form and Contents of Research Report, Layout, Qualities of a good research report, Bibliography and Referencing.	10
Group B	
III	Legal Research Methodology, Evolution and Motivating factors in Legal Research, Purpose, Steps in Legal Research, Models of Legal Research, Doctrinal and Non-Doctrinal Research, Case Study Method, Induction and Deduction Method, Data Analysis, Research Report, Current trends of Legal Research in India- Socio-Legal trend.	12

IV	Report Writing, Referencing & Citation
	   a) Report Writing—Academic format (Manuscript), Developing a report outline, Report planning, Writing a report
	
	   b) Style Guide— Formalized standards for writing documents
	   • MLA
	   • APA
	   • Chicago
	     Referencing and Citation styles -- Citation and referencing Guidelines and rules, Manuscript structure, Preventing Plagiarism, Mechanics of Writing
		12

Group C		
III	**Data Analysis and Hypothesis Testing:** Univariate and Bivariate Analysis, Hypothesis formulation and Testing: t test- One sample, two sample, paired, Z test, F test, Analysis of Variance (ANOVA) - One way and Two way ANOVA, Regression, Multiple Regression. Non- Parametric Tests-Chi-square tests, sign tests, Mann-Whitney U Test, K S one Sample Test, Cronbach's Alpha	14
IV	**Advanced Data Analysis:** Overview of Advanced Analysis, , Factor analysis, Cluster analysis, Conjoint analysis and Discriminant analysis. Use of MS-Excel and software in Research. Report Writing and Presentation-Form and Contents of Research Report, Layout, Qualities of a good research report, Bibliography and Referencing.	10
	Total	**48**

Text Books:
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- Chawla, D. & Sondhi, N. (2015). *Research Methodology-Concepts and Cases,* 2nd Edition. Noida: Vikash Publishing House.

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

Course Outcome:
On completion of the course, the scholars will be able to understand various issue involved in a research process. They will be able to use the various tools to analyze the data to draw meaningful conclusion.

Note:

1. *The 1st two Units (i.e. UNIT-I & UNIT-II) of the Syllabus is common for all RGU Scholars*
2. *The next two Units (i.e. UNIT-III & UNIT-IV) is applicable as per the following:*
   a. *Group A: For Scholars of belonging to Humanities & Social Science (i.e. RSB, RSC, RSHSS, RSBAS and related Schools)*
   b. *Group B: For Scholars of belonging to Arts, Language and Mass Communication (i.e. RSL, RSLA, RSCOM & RSFA and related Schools)*
   c. *Group C: For Scholars of belonging to Science & Engineering (i.e. RSET, RSIT, RSAPS, RSA, RSBSC, RSLSC and related Schools)*

Paper II: Computer Applications and Research & Publication Ethics

Credit Units: 04

Objective: The objectives of the course are

- To give the students the basic idea about Computer Systems.
- To give the students idea about internet for research purpose.
- To give the student basic idea about research publishing tools and software.
- To spread awareness about the publication ethics and publication misconducts.

Course Outcomes:

After completion of the course the students are expected to

- Have the basic idea about Computer Systems and its various components.
- Have the idea about issues related to programming and its implementation.
- Have the idea about different computer software and its use in research.
- Have the idea about publication ethics and publication misconducts.

DETAILED SYLLABUS

Modules	Topics	Course content	Hours	Marks
I	Computer Fundamentals	Computer basics : • Algorithm, characteristics and generation of computers • components, data representation, input output units, • Computer memory and its organization, • Programming languages, compiler, interpreter, high, low and assembly language Operating System & Database : • need, functions, types of OS • basics of open source software • Traditional file based system, need and functions of database • DDL,DML, Basics Normalization Computer Network: • Networking basics and its need, communication media • LAN, MAN, WAN, Topology, OSI layer • Internet, intranet, WWW, email, eBooks and virtual library. • UGC infonet, INFLIBNET and ERNET, role of computer in research	9	16
II	Philosophy and Ethics	Introduction to philosophy: definition, nature and scope, concept, branches Ethics: Definition, moral philosophy, nature of moral judgements and reactions Scientific conduct : • 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	9	17

III	Publication Ethics	- 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 - Violation of publication ethics, authorship and contributor ship - Identification of publication misconduct, complaints and appeals - Predatory publishers and journals	9	17
IV	Practices	Practices on computer fundaments: - Working with Linux - Research Publication, calculation and presentation tool : Word, Excel & PowerPoint, Latex , - Data analysis software : SPSS, Python Software tools : - Use of Plagiarism software like Turnitin, Urkund and other open source software 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 Practices on Open Access Publishing: - Open access publishing and initiatives - SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies. - Software tool to identify predatory publications developed by SPPU - Journal finder/ journal suggestion tools viz. JANE, Elsevier journal finder, Springer, Journal Suggesster etc. Group Discussion : - Subject specific Ethical Issues, FFP, authorship - Conflicts of interest - Complaints and Appeals : Examples and Fraud from India and aboard	18	50
		Total	48	100

Text/Reference Books:

1. Computer fundamentals by Pradip K. Singha and Priti Singha (BPB Publication)
2. Microsoft Office System 2012 edition (PHI publication)