**SYLLABI AND SCHEME OF EXAMINATION FOR
PH.D COURSE WORK (COMMERCE)
W.E.F. SESSION 2020-21**

DEPARTMENT OF COMMERCE

INDIRA GANDHI UNIVERSITY MEERPUR (REWARI)-123401
(Established under State legislature Act 29 of 2013)

Revised Syllabi&Scheme of Examination of
Ph. D Course work (Commerce) w.e.f. the session 2020-21

The Ph.D Coursework (Commerce) will be a one semester course. There will be five compulsory papersmentioned as follows:

Outline of the Course	Nomenclature of the Course	Course Code	Credit Total (L+T+P)	Marks (Theory+ Internal Assessment/Workshop)
Compulsory Course	Research Methodology	MPC101	4(4+0+0)	100 (80 Theory+20 IA)
Compulsory Course	Computer Applications in Research	MPC102	4(2+0+2)	100 (50 Theory+50 Workshop)
Compulsory Course	Quantitative Techniques in Commerce	MPC103	4(4+0+0)	100 (80 Theory+20 IA)
Compulsory Course	Research Ethics	MPC 104	2(2+0+0)	50
Compulsory Course	Review of Literature and Seminar	MPC 105	2(2+0+0)	50

- There will be theory paper of 50 marks in the subjects "Computer Applications in Research and a Workshop of 50 marks. Evaluation of workshops shall be done by a Board of examiners (through practical exam followed by Viva-Voce) consisting of one internal examiner and one external examiner to be appointed by the Chairperson, Department of Commerce. There will be no internal assessment in this paper.

- Internal Assessment of Twenty marks (wherever applicable) shall be based on the Presentations to be made by the students in the respective classes on the topics related to the subject. Students shall have to make two presentations per subject. A hard copy of the presentation shall be submitted with the teacher concerned for record.

- For the course 'Review of Literature and Seminar', the students will review 15 to 20 papers in the field of their interest and prepare a write-up. A seminar would be presented thereon. The write-up and presentation would be assessed by a committee consisting of chairperson, one faculty member and one external expert appointed by chairperson.

Marks of Theory: 80
Internal Assessment: 20
Time: 3 Hours.

Course Objectives:- To expose the students to the concepts of research, how to identify the research problems in Commerce and Management, process of research, research design available for researchers, data collection technique and methods and also expose to technique of data analysis like; parametric, non-parametric test and ANOVA up to two way etc.

Course Outcomes: -At the end of the course students will be able to understand the concepts research, role of research in commerce and management, types of research, design of research, how to collect the required data, how to construct a sound questionnaire to collect the desired data along with other methods of data collection. Further the students are able to understand the use of parametric, non- parametric test, ANOVA etc. in data analysis which are helpful in making business decisions. At last students are able to understand how to present the research report in an effective manner.

Note: The examiner shall set nine questions in all covering the whole syllabus. Question No.1 will be compulsory covering all the units and shall carry 8 small questions of two marks each. The rest of the eight questions will be set from all the four units. The examiner will set two questions from each unit out of which the candidate shall attempt four questions selecting one question from each unit. All questions shall carry 16 marks each.

Unit-1
Research; Meaning, Characteristics, Types and relevance of Research; Research Process; Identification and Formulation of the Research Problem. Hypothesis: Meaning, Types, Need, Functions and Sources of Hypothesis; Process of setting Hypothesis. Concepts: Meaning, Significance, Characteristics, Types and Operationalization of Concepts.

Unit-2
Research Design: Meaning, features, Need and Component of Research design; Research Design for Exploratory or Formulative Research Studies, Descriptive and Diagnostic Research Studies and Research Design for Hypothesis Testing or Experimental Research Studies.
Sample Design: The Concept and Aim of Sampling, Census versus Sample Surveys, Characteristics of a Good Sample, and Basis of sampling. Sampling Technique or Methods: Probability Sampling, Non- probability sampling; Problems in sampling. Sample Size Determination.

Unit-3
Measurement: Concept, Levels and Component of Measurement, Techniques of Developing Measurement Tools, Sources of Error in Measurement, Test of Sound Measurement.
Scaling: Meaning of Scaling, Basis of Scales-classification, Important Scaling Techniques-Rating and Ranking, Approaches of Scale Construction, Different Types of Scale-Arbitrary Scale, Differential Scale, Summated Scales, and Cumulative Scale.

Unit-4

Data Collection, Interpretation and Presentation: Meaning, Types, Importance and Sources of Data; Primary Source and Secondary Sources: Documentary Method, Questionnaire Method (including online questionnaire via Google doc.), Schedule Method, Interview Method, Observation Method. Processing of Data: Editing, Coding, Classification, Tabulation. Artificial Intelligence: Meaning and Role of Artificial Intelligence in research.

Interpretation and Presentation: Form of Interpretation, Prerequisites for Interpretation, Precautions, Conclusion and Generalization, Sources of Error in Interpretation. Presentation: Descriptive, Graphical, Diagram and Tabular Presentation.

Report Writing: Meaning, Functions, Types of Research Report, Steps of Planning Report Writing, Research Report Format and Principles of Report Writing, Typing of Report.

Suggested Readings:
- Deepak Chawla and NeenaSondhi, Research Methodology Concepts and Cases, Vikash Publishing House Pvt. Ltd., New Delhi.
- C.R. Kothari, Research Methodology Methods and Techniques, New Age International Publishers, New Delhi.
- P.Paneerselvam, Research methodology, PHI, New Delhi.
- K.V.Rao, Research Methodology in Commerce and Management, Sterling, New Delhi.
- R. Parshad Sharma and P. Satyanarayan, Research Method in Social Science, Sterling, New Delhi.
- K.N. krishana Swami, AppaIyerShivkumar and M. kathirajan, Management Research Methodology, Pearson, New Delhi.
- Wilkinson and Bhandarkar, Methodology and Technique of Social Research, Himalaya, New Delhi.
- P. Saravanval, Research Methodologhy, KitabMehal, New Delhi.
- V.P. Michael, Research Methodology in Management, Himalaya, New Delhi.
- S.N. Murthy and U. Bhojanna, Business Research Methods, Excel, New Delhi.
- Deepak Kumar Bhattacharya, Research Methodology, Excel, New Delhi.
- Yogesh Kumar Singh, Fundamental of Research Methodology and Statistics, New Age, New Delhi.
- Dr. Prasant Sarangi, research methodology, Taxmann's, New Delhi.

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Theory: 50
Workshop: 50
Time: 3 hours

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Course Objectives:
- To enable the students to use MS office for data presentation, report writing etc.
- To enable the students to apply different parametric and non-parametric tests.
- To enable the students to transform the data in meaningful way.
- To enable the students to better analyze the data using MS excel, SPSS and E-views software.
- To enable the students to know the research ethics

The students will be able to
- use MS office for data presentation, report writing etc.
- apply different parametric and non-parametric tests.
- transform the data in meaningful way.
- better analyze the data using MS excel, SPSS and E-views software.
- Follow the research ethics.

Note: In theory paper the examiner shall set nine questions in all covering the whole syllabus. Question No.1 will be compulsory covering all the units and shall carry 5 small questions of two marks each. The rest of the eight questions will be set from all the four units. The examiner will set two questions from each unit out of which the candidate shall attempt four questions selecting one question from each unit. All questions shall carry 10 marks each. There will be no theory paper in Workshop. Evaluation of workshop shall be done by a Board of Examiners (through a presentation by the students followed by Viva-Voce) consisting of one internal and one external examiner to be appointed by the Chairperson (Commerce). There is no internal assessment in this paper.

Unit-I
Introduction to SPSS: SPSS Environment, Data View and Variable View, Text Output Editor, Toolbar, Menus, Dialogue Boxes, Opening and Saving Files.
Preparation of Data Files: Defining Variables – Variables Labels, Value Labels, Missing Values, Variable Types, Column Format, Measurement Level; Data Entry, Inserting and Deleting Cases and Variables, Moving Variables.
Unit-II
Data Screening and Transformation: Errors in data entry; Accessing Normality & Homogeneity of variance; Data transformation – recode, compute, data selection.
Data Analysis: Descriptive statistics – Frequency Distribution, measurement of central tendency and variability; Reliability test, Correlation & Regression; One Sample t-test, Repeated measures t-test and independent groups t-test; One-way and Two-way ANOVA with post-hoc comparisons; Chi-square test. Factor Analysis
Unit-III

Introduction to E-Views Software, Application ofE-Views in Regression analysis, AR, MA, ARMA and ARIMA Modelling; Assessing Stationarity, Multicollinearity&Hetroskedasticity, Application of E-Views in Granger Causality Test, VAR Model & VECM, Fixed Effect and Random Effect Models.

Unit-IV

Application of MS Office and MS Excel in presentation of data and report writing.

Online Resources for Research: Databases and Websites

Style of Referencing: APA Style, Harvard and MLA Style. Application of MS Word and Mendeley software in referencing, Online Citation tools

Suggested Readings:

- Andy Field. Discovering Statistics Using SPSS. Sage Publications
- Sheridan J Coakes; Lyndall Steed and Peta Dzidic. SPSS for Windows – Analysis without Anguish. Wiley India.
- Darren George and Paul Mallery,SPSS for Windows Step by Step: A Simple Guide. Pearson
- Donald Cooper,Pamela Schindler. SPSS Windows Student Version for use with Business Research Methods. Tata McGraw Hill.
- Julie Pallant. SPSS Survival Manual. Tata Mc Graw Hill
- Kiran Pandya, SmrutiBulsari, Sanjay Sinha. SPSS IN SIMPLE STEPS. Wiley India.
- Uma Sekaran and Roger Bougie. Research Methods for Business. Wiley India.

Marks of Theory: 80
Internal Assessment: 20
Time: 3 hours

COURSE OBJECTIVE:This course relates to the science of analyzing data to convert information to useful knowledge. This knowledge could help the research scholars to achieve their research objectives. This course seeks to enable the scholars to get an insight into nature of data and data analysis techniques. It is structured around the broad contours of the different types of data analytics, namely, descriptive, inferential, predictive, and prescriptive analysis.

COURSE OUTCOMES:After studying this course, the students will be able to understand and use the various tools and techniques for data analysis like descriptive and inferential statistics. It will enable the students to use Regression Analysis, Parametric and Non-Parametric tests for hypothesis testing and other statistical tools along with the basic econometric tools and techniques.

Note: The examiner shall set nine questions in all covering the whole syllabus. Question No.1 will be compulsory covering all the units and shall carry 8 small questions of two marks each. The rest of the eight questions will be set from all the four units. The examiner will set two questions from each unit out of which the candidate shall attempt four questions selecting one question from each unit. All questions shall carry 16 marks each.

Unit 1.
Descriptive statistical techniques with their Application.
Correlation and Regression: Simple, Partial and Multiple and their application in Research.
Normal Distribution, Sampling distribution.

Unit 2.
Hypothesis Testing
Parametric tests: T-test and Analysis of Variance – one way classification, two way classification.
Non–Parametric Tests: The Runs test of randomness; tests of two-matched samples: Wilkoxson test, Signed Rank- Sum test; test involving two independent samples: The Mann- Whitney U Test;tests for K samples: The Kruskal Wallis H test, Friedman's test.

Unit 3.
Chi-Square test & its application.
Multivariate Techniques: Introduction to Cluster Analysis, Factor Analysis, Reliability Analysis, ANCOVA & MANOVA, Repeat measure ANOVA.

Unit 4.
Basics of Econometrics;OLS Regression and its Assumptions; Stationarity, Multicollinearity, Hetroskedasticity and Auto-correlation.
AR, MA, ARMA and ARIMA Modelling; Granger Causality Test, VAR and VECM.
Panel Data Analysis: Fixed Effect and Random Effect Model.
Introduction to ARCH & GARCH.

Suggested Readings:
- R.P.Hooda. Statistics for Business and Economics. Vikas Publishing House.
- S.P. Gupta. Statistical Method

- Andy Field. Discovering Statistics Using SPSS. Sage Publications
- A Koutsoyiannis. Theory of Econometrics. Palgrave Publication.
- DamodarGujrati, Dawn Porter, SangeetaGunasekar. Basic Econometrics. McGraw Hill Education.
- Srivastava, Shenoy and Sharma - Quantitative Techniques for Managerial Decision.

Indira Gandhi Univeristy, Meerpur – Rewari
Ph.D. Course Work

RESEARCH AND PUBLICATION ETHICS
COURSE CODE : RPE – 2020

Maximum Marks: 50   **Credit - 02**   **Theory Marks: 25**
Time: 2 Hrs.   **Practical and viva voce Marks: 25**

Note: The question paper shall have total eight questions of five marks each covering Unit 1, 2 and 3. The students shall be asked to attempt total five questions in all.

Practical and viva voce examination will be of 25 marks from Unit number 4, 5 and 6 and shall be conducted by two internal examiners appointed by the Vice-Chancellor.

Course Objective:
1. To understand the philosophy of science and ethics, research integrity and publication ethics.
2. To identify research misconduct and predatory publications.
3. To understand indexing and citation databases, open access publications, research metrics (citations, h-index, Impact Factor, etc.)
4. To understand the usage of various plagiarism tools.

Course Outcomes:
At the end of the course, the student will have awareness about the publication ethics and publication misconducts.

Note: Unit 1, 2, 3 are to be covered via Theory mode and Unit 4, 5, 6 are to be covered via practice mode.

OVERVIEW
This course has total 6 units focusing on basics of Philosophy of science and ethics, research integrity, publication ethics. Hands on sessions are designed to identify research misconduct and predatory publications. Indexing and citation databases, open access publications, research metrics (citations, h-index, Impact Factor, etc.) and plagiarism tools will be introduced in this course.

Pedagogy:
Class room teaching, Guest Lectures, group discussions and practical sessions. Total teaching hours shall be 30 hours.

Evaluation
Continuous assessment will be done through tutorials, assignments, quizzes and group discussions. Weightage will be given for active participation. Final written examination will be conducted at the end of the course.

SYLLABUS IN DETAIL

Theory

RPE 01: PHILOSOPHY AND ETHICS (3hrs.)
1. Introduction to Philosophy: definition, nature and scope, concept, branches
2. Ethics: definition, moral philosophy, nature of moral judgment and reactions

RPE 02: SCIENTIFIC CONDUCT (5hrs.)
1. Ethics with respect to science and research
2. Intellectual honesty and research integrity
3. Scientific misconducts: Falsification, Fabrication and Plagiarism (FPP)
4. Redundant publications: duplicate and over lapping publications, salami slicing
5. Selective reporting and misrepresentation of data

RPE 03: PUBLICATIUON ETHICS (7hrs.)

1. Publication ethics: definition, introduction and importance
2. Best practices / standard setting initiatives and guidelines: COPE, WAME, etc.
3. Conflicts of interest
4. Publication misconduct: Definition, concept, problems that lead to unethical behavior and vice versa, types
5. Violation and publication ethics, authorship and contributor ship
6. Identification of publication misconduct, complaints and appeals
7. Predatory publishers and journals

Practice
RPE 04: OPEN ACCESS PUBLISHING (4hrs.)
1. Open access publications and initiatives
2. SHERPA/RoMEO online recourse to check publisher copyright & self archiving policies
3. Software tool of identify predatory publications developed by SPPU
4. Journals finder/journals suggestion tools viz. JANE, Elsevier Journals Finder, Springer Journals Suggester, etc.

RPE 05: PUBLICATION MISCONDUCT (4hrs.)
A. Group Discussions (2hrs.)
1. Subject specific ethical issues, FFP, authorship
2. Conflicts of interest
3. Complaints and appeals: examples and fraud from India and abroad
B. Software tools (1hrs.)
1. Use of plagiarism software like Turnitin, Urkund and other open source software tools

RPE 06: DATABASE AND RESEARCH METRICS (7hrs.)
A. Database (4hrs.)
1. Indexing databases
2. Citation databases: Web of Sciences, Scopus, etc.

B. Research Metrics (3hrs.)
1. Impact factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score
2. Metrics: h-index, g index, i 10 index, altmetrics

Suggested Reading

- Nicolas H. Steneck. Introduction to the Responsible Conduct of Research. Office of Research Integrity, 2007. Available at: http://ori.hhs.gov/sites/default/files/rcrintro.pdf
- The student's Guide to Research Ethics By Paul Oliver Open University Press, 2003.
- Responsible Conduct of Research By Adil E. Shamoo; David B. Resnik Oxford University Press, 2003.
- Ethics in Science Education, Research and Governance Edited by Kambadur Muralidhar, Amit Ghosh Ashok Kumar Singhvi. Indian National Science Academy, 2019. ISBN: 978-81-939482-1-7. http:www.insaindia.res.in/pdf/Ethics_Book.pdf
- Anderson B.H., Dursaton, and Poole M.: Thesis and assignment writing, Wiley Eastern 1997.
- Bijorn Gustavii: How to write and illustrate scientific papers? Cambridge University Press.
- Bordens K.S. and Abbott, B.b.: Research Design and Methods, Mc Graw Hill, 2008.
- Graziano, A., M., and Raulin, M.,L.: Research Methods – A process of Inquiry, Sixth Edition, Pearson, 2007.
- Bird, A. (2006). Philosophy of Science. Routledge.
- MacIntyre, Alasdair (1967) A Short History of Ethics. London.
- P. Chaddah, (2018) Ethics in Competitive Research: Do not get scooped; do not get plagiarized, ISBN: 978-9387480865.
- National Academy of Sciences, National Academy of Engineering and Institute of Medicine (2009). On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition. National Academies Press.
- Resnik, D.B. (2011). What is ethics in research & why is it important. National Institute of Environmental Health Sciences, 1-10. Retrieved from https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm
- Beall, J. (2012). Predatory publishers are corrupting open access. Nature, 489(7415), 179-179.
- https://doi.org/10.1038/489179a

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