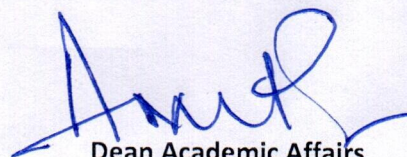Ref: 01 PU/DAA/Ph.D/SS/20/ 966

Date: 12/03/2024

Scheme of Examination for Pre Ph.D. (Course Work) with reference to U.G.C letter No. D.O.No.F.1-1/2018 December 2019 mandatory to include "Research and Publication Ethic" in the pre registration course work for Ph.D.

The Academic Council approved revision in credit frame in PHD 04 from December 2023 session onwards on December 23, 2023 vide reference no. 02 PU/DAA/Academics/AC-MOM/09/889(A)

S.N.	Paper Code	Paper Name	Credit Offered	Theory		Practical		Total
				End Semester	Continuous Evaluation	End Semester	Continuous Evaluation	
1	PHD-01	Research Methodology	4	80	20	-	-	100
2	PHD-02	Computer Application	4	50	20	30	-	100
3	PHD-03	Seminar/ Presentation (including Review of Published Research in the relevant field)	4	-	-	80	20	100
4	PHD-04	Research and Publication Ethics	4	80	20	-	-	100
Total			16	210	60	110	20	400

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Ph.D. Course Work Syllabus

Programe	Paper Code	Paper Name	Credit Offered	Theory (End Semester)	Practical (End Semester)	Theory (Continuous Evaluation)	Practical (Continuous Evaluation)
Ph.D. Course work	PHD-01	Research Methodology	4	Max. Marks=80 Duration- 3 hrs	-	20	-

Unit-I: Meaning, Importance of Research & Research Method

Meaning and Importance of Research: Types of Research, Qualities of Researcher, Components of Research Problem, Various Steps in Scientific Research, Selection and formulation of Research Problem, Research Design, Research Method: Historical, Institutional, Legal, Philosophical, Comparative, Ethical, Survey, Case Study, Content Analysis, Experimental Method, Triangulation, Mixed Method Research. Hypothesis - different types.

Unit- II: Critical Analysis of Literature & Review & Report Writing

Critical Analysis of Literature Review: Source of Literature, Various referencing procedures, maintaining literature data using end note 2, identifying the gap areas from the literature review and research data base, problem formulation, identifying variables to be studied, determine the scope, objectives, limitations and assumptions of the identified research problem, justify basis for assumption, formulate time plan for achieving targeted problem solution. Report writing structure and component of research report, types of report, good research report.

Unit-III: Quantitative Methods

Meaning and Definition of Quantitative Method. Measure of Central Tendency; Calculation of Mean, Median and Mode. Measure of Dispersion: Range, Mean Deviation and Standard Deviation. Correlation and Regression. Test of Significance: student t- Test, F-Test and Chi-Square Test.

Unit-IV: Research Ethics

Ethical issues in Research, IPR: intellectual Property lights and patent law, techniques of writing patent, filing procedure, technology transfer, copy right, royalty trade related aspects of intellectual property rights. Publishing: Design of research paper, Citation and acknowledgement, Plagiarism tools, Reproducibility and Accountability.

Unit-V: Review of Published Research in Relevant field

Examining the methods of evaluating and interpreting published research. Developing skills needed to research available literature for information relevant to a given topic. Exploring the principles and techniques of topic development and testing. Examining the methods of evaluating and interpreting data collected in the research process.

Reference Books:

1. Kothari, C.R. [2008]. Research Methodology: Methods and Techniques, Second Edition. New Age International Publishers, New Delhi.
2. Sinha, S.C. and Dhiman, A.K. [2002] Research methodology, Ess publication. Volume 2, New Delhi.
3. Kothari, C.R. [2005]. Quantitative Techniques, Vikas Publishing House, New Delhi.
4. Gupta S.C. [2009]. Fundamental of Statistics, Himalaya Publication House, Bombay.
5. Kumar. [2011]. Research Methodology: A step by step guide for beginners, Sage Publication Ltd. New Delhi.

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Programe	Paper Code	Paper Name	Credit Offered	Theory (End Semester)	Practical (End Semester)	Theory (Continuous Evaluation)	Practical (Continuous Evaluation)
Ph.D. Course work	PHD-02	Computer Application	4	Max. Marks=50 Duration-3 hrs	30	20	-

UNIT-I: Introduction

Classification of computers Types of Computer memory, types of software's : application of system software's; operating systems and types , single user, multi- user, multi-tasking, single tasking, application of computer for research

UNIT-II: Data Communication and Networks

Data communication concepts, local area network, metropolitan area network, and wide area network, internet, intranet , extranet, website . Email, search engines-enterprise, E- communication and E- collaboration

UNIT-III: MS Office and its application

File handing in window, various versions of MS Office, MS- Word: Text formatting, Mail merge, Macro, MS-Excel : Features, various formula and functions, MS-Power Point: Creating presentations and adding effects
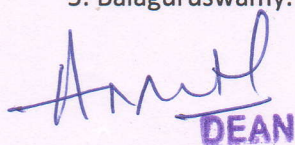
UNIT-IV: SPSS

Introduction to SPSS: Definition, objective s and features, data analysis using SPSS: Data entry creating variables, switching to data labels. Data analysis: Frequencies, recording into different variables, cross Tabulations and layers.

UNIT-V: Application of Internet in research

INFLIBNET, Use of Internet, site - DOAJ, Use of E Journals, Use of E- library, use of EBSCO HOST online database of Academic Libraries .
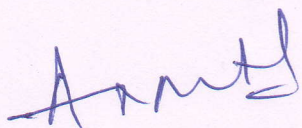
References:-

1. Henry C. Lucas. Jr. [2000]. Information Technology for management. Tata McGraw-Hill Publishing Company Ltd . New Delhi.
2. Sinha P. K. [1992]. Computer Fundamentals, BPB Publications, New Delhi.
3. SPSS -Operating manual and handbook - latest version.
4. Chandera, A. and Saxena. T.P. [2000], Style Manual. Metropolitan Book Co. Lt d. New Delhi.
5. Balaguruswamy. E. [2009] . Programming in ANSIC. Tata McGraw Hill Publication. New Delhi.

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Programe	Paper Code	Paper Name	Credit Offered	Theory (End Semester)	Practical (End Semester)	Theory (Continuous Evaluation)	Practical (Continuous Evaluation)
Ph.D. Course work	PHD-03	Seminar/ Presentation (including Review of Published Research in the relevant field)	4	-	80	-	20

1. Each research student will submit two assignments – one from each paper (PHD-01 &PHD_02) – on any one unit of the student's choice.
2. Each research student will also give a presentation on any one topic of the student choice from either of the two paper (PHD-01/PHD-02)

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Ph.D. Course Work Syllabus

Programe	Paper Code	Paper Name	Credit Offered	Theory (End Semester)	Practical (End Semester)	Theory (Continuous Evaluation)	Practical (Continuous Evaluation)
Ph. D Course Work	PHD-04	Research and Publication Ethics	4 credits	80	NA	20	NA

Unit-I: RPE 01: PHILOSOPHY AND ETHICS

1. Introduction to philosophy: definition, nature and scope, concept, branches

2. Ethics: definition, moral philosophy, nature of moral judgments and reactions.

Unit- II: RPE 02: SCIENTIFIC CONDUCT

1. Ethics with respect to science and research
2. Intellectual honest and research integrity
3. Scientific misconducts: falsification, fabrication, and plagiarism.
4. Redundant publications: duplicate and overlapping publications, salami slicing
5. Selective reporting and misrepresentation of data.

Unit-III: RPE 03: PUBLICATION ETHICS

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

Unit-IV: RPE 04: OPEN ACCESS PUBLISHING, DATABASES AND RESEARCH METRICS
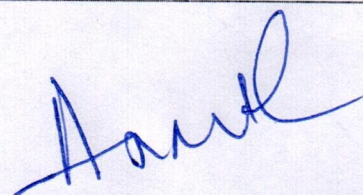
1. Open access publications and initiatives
2. SHERPA/RoMEO online recourse to check publisher copyright and self-archiving policies.
3. Software tool to identify predatory publications developed by SPPU
4. Journal finder/ journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.

A Databases
1. Indexing databases
2. Citation databases: Web of Science, Scopus, etc.
B. Research Metrics
1. Impact Factor of journal as per journal citation report, SNIP, SJR, IPP, Cite Score.
2. Metrics: h-index, g index, i10 index, altmetrics

Unit- V: RPE 05: PUBLICATION MISCONDUCT

A. Group Discussions
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
Use of plagiarism software like Turnitin, Urkund and other open source software tools.

References

Bird, A (2006). *Philosophy of Science*. Routledge

Maclintryre, 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
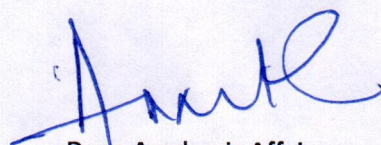
National Academy of Science, National Academy of Engineering and Institute of Medicine. (2009). *On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition. National Academics Press.*

Resnik, D.B. (2011). What is ethiocs in research & why is it important. *National Institute of Environmental Health Science,* 1-10. Retrieved from https://www.niehs.nih.gov/research/resourced/bioethics/whatis/index.cfm Beall,J. (2012). Predatory publication are corrupting open access. Nature, 489(7415), 179-179. https://doi.org/10.1038/489179a

Indian National Science Academy (INSA), Ethics in Science Education, Research and Government(2019), ISBN: 978-81-939482-1-7. http://www.insaindia.res.in/pdf/Ethics Book.pdf

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