

Criterion – 3

Research, Innovations and Extension

NAAC- SSR (2nd Cycle)



ETERNAL UNIVERSITY

BARU SAHIB, SIRMOUR-173101
HIMACHAL PRADESH

3.4.1(1)

Syllabus of Research Methodology Course



ETERNAL UNIVERSITY

BARU SAHIB, SIRMOUR-173101
HIMACHAL PRADESH



Eternal University

(World peace through value based education)

EU/Gen/RM/2023/01

Date: 25/08/2023

Proceeding of the meeting held on 22/08/2023 at 12:00 Noon in the Academic Council Room regarding **Research Methodology (RM-599)** course

Following of the faculty were present in the meeting

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|-----|---------------------|----------------------------------|
| 1. | Dr. AS Ahluwalia | Dean Academic Affairs |
| 2. | Dr. BS Sohal | Dean PGS |
| 3. | Dr. SK Chauahn | Dean, ACECM |
| 4. | Dr. SK Sharma | Dean, DKSGACA |
| 5. | Dr. Purvi Luniyal | Dean, ACASS |
| 6. | Dr. Sandipan Gupta | Dean, ACBS |
| 7. | Dr. Raina Bhatia | Principal, ACE |
| 8. | Dr. Yogeeta Thakur | DSW |
| 9. | Dr. Meenakshi Gupta | Librarian (Officiating) |
| 10. | Mr. Balraj Singh | Director Admission |
| 11. | Dr. Ajar Nath Yadav | Coordinator Research Methodology |

Dr. AS Ahluwalia welcomed the all faculty present in the meeting. Dr. Ahluwalia said that, in 81st Academic Council Meeting (22nd June, 2023), it has been approved that Research Methodology will be of **four credits** for students admitted during the Academic session 2023-24. However, there should be some solution for Ph.D. Students registered before 2022 and have completed Research Methodology Course of Three credits.

- Dr. BS Sohal informed the house that, as per UGC Regulation 2016, (the Minimum Standards and procedure for Award of Ph.D. Degree), and UGC Regulation 2022, the credit requirement for Ph.D. coursework is a minimum of 12 credits, including a "Research and Publication Ethics" as notified by UGC vide D.O. No. F.1-/2018(Journal/Care) in 2019 and a "Research Methodology" course. As per UGC Regulation 2022, Research Methodology is a four credits course. Dr. BS Sohal also informed the house that as per minimum standard and procedures for award of Ph.D. Degree regulations 2022 items 7.2 "A minimum of four credits shall be assigned to one or more courses on Research Methodology which could cover areas such as quantitative methods, computer applications, research ethics, and review of published research in the relevant field, fieldwork etc."

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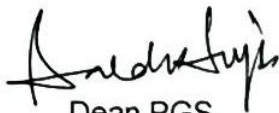
Dr Sohal endorsed that the ACM meeting held on June 22, 2023 has approved the course RM-599 with new syllabi as per item No 81/01/2023. The students who have cleared Research Methodology course in their Master Programme with 03 credits have been exempted from this course in their Ph.D. programme at Eternal University. However, as per notification (Minimum Standards and Procedures for the Award of Ph.D. Degree) regulations **2016** and **2022**, henceforth the Ph.D. degree will be awarded to a candidate who undertakes a minimum of **04 credits** for one or more course on Research Methodology.

After thorough discussion, the following decisions were made:

1. Ph.D. students admitted in the session 2023-24 have to register in new course i.e. RM 599 for 04 credits and they will not be exempted even though they have cleared Research Methodology course in their Master Programme with less than 04 credits. However such candidates who have passed a course on Research Methodology with 04 credits at their Master degree programme shall be exempted based on their request and documentary proof.
2. The students admitted in Ph.D. programme before session 2023-24, who have been exempted course Research Methodology with 03 credits will have two options:
 - (A) They can register for the new RM 599 with 04 credits in the current session.

OR

 - (B) They can register for additional course RM 598 (Research & Publication Ethics) for 01 credit.
3. Student opting 2 (B) can join the tutorial course RM 599 & appear in their final examination conducted by CoE. Such students will be awarded grade in RM 598 as an additional course.
4. The students, who have already completed Ph.D. programme and have not cleared RM with 4 credits can avail the additional course of RM 598 of 01 credit with requisite fee.
5. The Ph.D. students who have submitted thesis by due date during the current semester and waiting for viva voce exam, will be exempted from the tuition fee to clear the course RM 598.
6. Henceforth no Ph.D. student will be awarded the degree with Research Methodology course of 03 credits.
7. The unit wise course content of RM-598 is attached herewith. The matter will be placed in next ACM for approval with retrospect effect.


Dean PGS
25/8/2023

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Research and Publication Ethics (RM-598)

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UNIT-I: PHILOSOPHY AND ETHICS

Introduction to Philosophy: definition, nature and Scope, Concept, Branches. Ethics: definition, moral philosophy, nature of moral judgements and reaction

UNIT-II: PUBLICATION ETHICS

Publication ethics: definition, introduction and importance. Best practices /Standards setting initiatives and guidelines: Committee on Publication Ethics (COPE). The World Association of Medical Editors (WAME). Conflicts of interest. Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types. Violation of publication ethics, authorship and contributor ship. Identification of publication misconduct, complaints and appeals. Predatory publishers and journals.

UNIT-III PUBLICATION PROCESS

Software tool to identify predatory publications developed by SPPU. Journal finder /Journal suggestion tools viz. JANE, Elsevier journal Finder, Springer Journal Suggester etc.

Recommended Books

1. Bird A. (2006). Philosophy of Science. Routledge
2. MacIntyre Alasdair (1967) A Short History of Ethics. London
3. P. Chaddah (2018) Ethics in Competitive Research: Do not get Scooped; do not get Plagiarized, ISBN:978-9387480865
4. 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.
5. Resnik DB (2011) what is ethics in research & why is it important. National institute of Environmental Health Science, 1-10
6. Beall J (2012) Predatory publishers are corrupting open access. Nature, 489(7415), 179-179.
7. Indian National Science Academy (INSA), Ethics in Science Education, Research and Governance (2019), ISBN: 978-81-939482-1-7.

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RESEARCH METHODOLOGY (RM 599)

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UNIT-I

Research: need, importance, types of research -fundamental v/s applied and impact of research. Research prioritization – objectives, process of research. Qualitative and quantitative research. Ethics with respect to science and research. Committee on Publication Ethics (COPE). Violation of publication ethics, authorship and contributor ship. Identification of publication misconduct, complaints and appeals.

UNIT- II

Qualities of a good research worker. Research as career, current status and future prospects of research. Process of selecting research problem; survey of literature; allied and critical literature, research infrastructure. Good Laboratory Practices (GLPs). Sampling design; types of sampling & their advantages/disadvantages, recording of observations; measurement and scaling techniques.

UNIT-III

Measures of central tendencies and relationships, sources and collection of primary & secondary data, storage and analysis of data. Pie chart, histogram and figures plotting. Formulation and types of hypotheses & their testing. Chi (χ^2) test, Z - test, t- test, F-test. Correlation, rank correlation and regression analysis, ANOVA- test of significance and error analysis. Absolute error, relative error, percentage error.

UNIT -IV

Computer and informatics: introduction, word processing, excel, power point presentation. Information resources and various databases. Introduction to statistical software(s). LATEX. Impact factor and indexing data base. Different search engines in Library for research articles. Web of science, web browsing. Scopus organization of reference material using endnote; bibliography. Scientific misconduct: Falsification, fabrication and plagiarism (FFP), IPR and patent application. Entrepreneurship.

UNIT-V

Selecting research problem and preparation of synopsis as per guidelines of university. Research paper and thesis writing. Compilation and presentation of results, writing & publication of research paper. Multidisciplinary and multi-institutional research; writing research proposal for external funding. Demonstration of departmental research activities through pictures, charts, research project reports and instrumentation. PG scholarship funding agencies Govt. of India. Post Doctoral Fellowships (PDFs).

Recommended Books

1. Gupta D. D, A.M. Moon and M.K. Gupta. An Outline of Statistical Theory (Vol. I/II).
2. Gupta S.P. Statistical Methods. Sultan Chand Publications.
3. Gurumani N. Research Methodology: For Biological Sciences. MJP Publisher.
4. Kothari C.R. Research Methodology: Methods and Techniques. New Age International.
5. Kothari C.R.and K.F. Hatt. Methods in Social Research.
6. Kumar Pranesh, Daroga Singh and Padam Singh. Handbook of Sampling. IASRI Publications.
7. Kumar R. Research Methodology: A Step-by-Step Guide for Beginners. Sage Publications Limited.
8. Laake P, Benestad HB, Olsen BR, (Editors). Research Methodology in the Medical and Biological Sciences. Academic Press.
9. Murthy C. Research Methodology, Vrinda Publication Pvt. Ltd. New Delhi.
10. Sharma Jai Narain. Research Methodology. Deep & Deep Publications.