# COURSES OF STUDIES

## FOR M.PHIL AND PHD PROGRAM

## (UNDER SEMESTER SYSTEM)

**(Effective from January 2020)**



# GANGADHAR MEHER UNIVERSITY, SAMBALPUR, ODISHA

| Sl No. | Paper | Semester | Credit | (Marks) Mid Term + Term End | Teaching Hours |
|--------|-------|----------|--------|------------------------------|----------------|
| 1 | **611 (Departmental)** | **Sem-1** | **4** | **100 (20+80)** | **60 Hrs** |
| 2 | **612( Research Methgodology-1)** | **Sem-1** | **4** | **100 (20+80)** | **60 Hrs** |
| 3 | **613( Research Methgodology-2)** | **Sem-1** | **4** | **100 (20+80)** | **60 Hrs** |
| 4 | **Teaching Assignment** | **Sem-1** | **4** | **100 (0+100)** | **60 Hrs** |
| 5 | **Dissertation** | **Sem-2** | **08** | **200** | **120 Hrs** |
| | **TOTAL** | | **24** | **600 (60+540)** | **360 Hrs** |

**Revised Syllabus of pre-registration course work for M.Phil. and Ph.D in GMU.**

# PAPER-612/712
# RESEARCH METHODOLOGY-I

Unit-I
## SCOPE, PHILOSOPHY AND ETHICS OF RESEARCH AND ETHICS
   i)     Introduction and Scope
   ii)    Introduction to philosophy: definition, nature and scope, concept, branches
   iii)   Ethics: definition, moral philosophy, nature of moral judgments and reactions, Research ethics, Institutional ethics committee.
   iv)    Ethics with respect to science and research
   v)     Intellectual honesty and research integrity

Unit-II
## SCIENTIFIC CONDUCT
   i)     Research problem: Identification, Selection, Formulation of research objectives
   ii)    Research design: Components, Types and Importance
   iii)   Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP)
   iv)    Redundant publications: duplicate and overlapping publications, salami slicing
   v)     Selective reporting and misrepresentation of data

Unit-III
## TECHNICAL WRITING
   i)     Literature search technique, using SCOPUS, Google Scholar, PUBMED, Web of science, Indian Citation Index, and RG
   ii)    Types of technical documents; Full length research paper, Short/Brief communications, Letters to editor, Book chapter, Review, Conference report, Project proposal Components of a full length research paper; , Rationale of the paper, Aims and objectives, Hypothesis building, Work plan, Materials and methodology, Results and discussion, Conflict of interest statement,
   iii)   Components of a research proposal; Project summary Key words, Origin of the proposal, Major objectives Methodology, Instrument facility available in the PI's department,

Overview of status of Research and Development in the subject, Importance of the proposed project in the context of current status.

iv) Styles of referencing; APA, MLA, Oxford, Harvard, Chicago, Annotated bibliography, Tools for citing and referencing, Grammarly, Endnote etc, How to cite and how to do referencing

Unit-IV

## PUBLICATION ETHICS

i) Publication ethics: definition, introduction and importance
ii) Best practices / standards setting initiatives and guidelines: COPE, WAME, etc.
iii) Conflicts of interest
iv) Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types
v) Violation of publication ethics, Subject specific ethical issues, FFP, authorship,
vi) Identification of publication misconduct, complaints and appeals
vii) Predatory publishers and journals
viii) Plagiarism-Pitfall
ix) Use of plagiarism software like Turnitin, Urkund and other open source software tools, . Complaints and appeals: examples and fraud from India and abroad

# PAPER-613/713
# RESEARCH METHODOLOGY-II

Unit-I
## IPR AND CYBER LAW.
    i)        Patents, Patent laws, process of patenting a research finding
    ii)      Intellectual property (IP), Intellectual property right (IPR)
    iii)    Copyright, Trademarks, GI
    iv)    Cyber laws
    v)     COPE

Unit-II
## QUANTITATIVE DATA ANALYSIS
    i)      Types of Data, Data Collection – Methods and Tools
    ii)     Hypothesis testing
    iii)    Normal and Binomial distributions and their property
    iv)    Tests of significance: Student $t$- test, $F$- test, $Chi$-$square$ test
    v)     Correlation and Regression
    vi)    ANOVA – One-way and Two-way, Multiple-range test

Unit-III
## COMPUTER FUNDAMENTALS
    i)      Introduction to MS-Office software: MS-Word(Track change)
    ii)     MS-Excel
    iii)    MS-Power Point
    iv)    Features for Statistical Data Analysis Tool Pack, SPSS
    v)     Tables, Figures and Pictures using Excel
    vi)    Preparation of Posters
    vii)   Electronic submission of manuscripts
    viii)  Communication skills, oral and poster

Unit-IV
## ADVANCED TOOLS & TECHNIQUES IN RESEARCH
    i)      Indexing databases
    ii)     Citation databases: Web of Science, Scopus, etc.
    iii)    Research Metrics
    iv)    Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score
    v)     Metrics: h-index, g index, i10 index, altmetrics
    vi)    Open access publications and initiatives
    vii)   SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies
    viii)  Software tool to identify predatory publications developed by SPPU
    ix)    Journal finder /journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.