

## **SYLLABUS FOR COURSEWORK**

# **Paper-I: Research and Publication Ethics & Computer Application in Research**

**(Credits-04, Lectures-60)**

### **Section-I: Research and Publication Ethics (Credits-02, Lectures-30)**

#### **THEORY**

##### **UNIT-1: PHILOSOPHY AND ETHICS (3L)**

1. Introduction to philosophy: definition, nature and scope, concept, branches
2. Ethics: definition. moral philosophy, nature of moral judgements and reactions

##### **UNIT-2: SCIENTIFIC CONDUCT (5L)**

1. Ethics with respect to science and research
2. Intellectual honesty and research integrity
3. Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP)
4. Redundant publications: duplicate and overlapping publications, salami slicing
5. Selective reporting and misrepresentation of data

##### **UNIT-3: PUBLICATION ETHICS (7L)**

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 versa, types
5. Violation of publication ethics. authorship and contributorship
6. Identification of publication misconduct, complaints and appeals
7. Predatory publishers and journals

#### **PRACTICE**

##### **UNIT-4: OPEN ACCESS PUBLISHING (4L)**

1. Open access publications and initiatives
2. SHERPA/RoMEO online resource to check publisher copyright & 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.

##### **UNIT-5: PUBLICATION MISCONDUCT (4L)**

- A. Group Discussions (2L)
  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 (2L)

- Use of plagiarism software like Turnitin, Urkund and other open source software tools

#### **UNIT-6: DATABASES AND RESEARCH METRICS (7L)**

##### **A. Databases (4L)**

1. Indexing databases
2. Citation databases: Web of Science, Scopus, etc.

##### **B. Research Metrics (3L)**

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

### **Section-II: Computer Application in Research (Theory & Practice) (Credits-02, Lecture-30)**

#### **UNIT-7: COMPUTER APPLICATION IN RESEARCH (10L+20P)**

- (a) Introduction to Computer – Hardware, Software, Computer Language (BASIC, FORTRAN, C), Introduction to Programming Technique, Flow chart, Generation & History (2 theory, 1 Practical)
- (b) Operating System Software – Introduction to DOS, Windows – 7, File Management, Common Maintenance of Computer using Windows/DOS. (1 Theory – 3 Practical)
- (c) MS-WORD – Writing Reports, Articles, Thesis, Preparing Tables, Formula & Symbols, Mail-Merge. (2 Theory, 6 Practical)
- (d) MS-EXCEL – Preparing Spreadsheet, Using Formulas & Functions, Database Management, Statistical Analysis, Graph, Hands on SPSS. (1 Theory, 5 Practical)
- (e) MS-PowerPoint – Preparing Presentations, slide Show, Handouts (1 Theory, 3 Practical)
- (f) Optimum utilization of data by correlating one Software with other. (1 Theory, 1 Practical)
- (g) Introduction to Paint, Microsoft Picture Manager, Internet. (1 Theory, 1 Practical)
- (h) Conclusion. (1 Theory)