

Rayat Shikshan Sanstha's
Yashwantrao Chavan Institute of Science (Autonomous) Satara
Department of Nanoscience and Technology
Name of the course: Research Instrumentation and Scientific Paper Writing
Syllabus Introduced from June, 2019
ADNTT 101: Scientific Paper Writing

Learning Objectives:

- 1) To study research methods and research methodology.
- 2) To study basic of review of literature.
- 3) To study research paper data collection.
- 4) To study data interpretation techniques.

Unit 1 Introduction **(10 Hr)**

Research – What is it?, Objectives of Research ,Motivation in Research ,Types of Research, Research Approaches, Significance of Research, Research Methods versus Methodology, Research and Scientific Method

Unit 2 Review of Literature **(12 Hr)**

Meaning of Review of Literature , Need of Review of Literature , Objectives of Review of Literature, Sources of Literature, The Functions of Literature, How to Conduct the Review of Literature, Some Hints for the Review of Literature, Precautions in Library Use, Reporting the Review of Literature

Unit 3 Methods of Data Collection **(13 Hr)**

Collection of Primary Data, Observation Method, Interview Method, Collection of Data through Questionnaires, Collection of Data through Schedules, Difference between Questionnaires and Schedules, Some Other Methods of Data Collection, Collection of Secondary Data, Selection of Appropriate Method for Data Collection

Unit 4 Interpretation and Report Writing **(13 Hr)**

Meaning of Interpretation, Why Interpretation?, Technique of Interpretation:, Precaution in Interpretation, Significance of Report Writing, Different Steps in Writing Report, Layout of the Research Report, Types of Reports, Oral Presentation, Mechanics of Writing a Research Report, Precautions for Writing Research Reports

Learning outcome: Student will able to

- 1) Know significance of research.
- 2) Understand types of research.
- 3) Understand meaning of review of literature.
- 4) Know functions of literature.
- 5) Understand methods for data collection.
- 6) Understand Collection of Data through Questionnaires.
- 7) Know significance of report writing.
- 8) Know precaution in data interpretation.

Reference Book:

1. Research Methodology: Methods and Techniques Book by C. R. Kothari
2. Research Methodology: by Manoj Dixit.

ADNTL 102: Practical (Credit 04)**Practical**

1. Downloading research paper by using Sci-Hub
2. Downloading research paper by using library genesis
3. Data collection 1
4. Data collection 2
5. Data collection 3
6. Data collection 4
7. Literature survey in table format Data collection 1
8. Literature survey in table format Data collection 2
9. Literature survey in table format Data collection 3
10. Literature survey in table format Data collection 4
11. Abstract writing 1
12. Abstract writing 2
13. Abstract writing 3
14. Creating library using Mendely
15. Mendely for Managing documents and references
16. Mendely for Citing references
17. Mendely for Sharing Documents and References
18. Create basic LaTeX document and title page using
19. Equation writing by using LaTeX.
20. Figure Insertion with LaTeX
21. Bibliography with BIBTEX

Project Course (2 Credits) (24 Hr.)