

Overview of scientific research: improvement through research; nature of scientific inquiry; application of research in industry. Project selection and development: Writing a research grant application; role of students & supervisors; experimental design and investigation; reviewing the literature; decision on techniques to be employed. Methodology: samples, controls and replications; sampling methods; use of microorganisms, animals, plants and humans in experimentation; use of pathogens in experiments; data processing. Analysis of results: Results interpretation; primary and secondary sources; scientific record keeping. Scientific writing: Compilation of a research report; publication of a research paper; selection of journal, instructions to authors, letters to editor, acknowledgement, referee's comments and suggestions, sending a revised manuscript and acceptance letter; publication of review articles. Ownership of data: conflict and justification of ideas; plagiarism and its control; filing patent application.

### **SUGGESTED READINGS**

1. Fink , A. G. 2004. Conducting Research Literature Reviews: From the Internet to paper. Sage Publications, London.
2. Grazinao, A.M. and M.L. Raulin (2006) Research methods: A process of Inquiry. Longman. London
3. Holiday, A. 2002. Doing and writing qualitative research. Sage Publications. London.
4. Leedy, P.D. and J.F. Ormrod. 2009. Practical Research: Planning & Design. Publishers: Merrill.
5. Lindof, T.R. 2002. Qualitative Communication Research Methods. 2<sup>nd</sup> ed. Sage Publications, London.
6. Sharma, M. 2004. Research Methodology. Anmol Publications. New Delhi. India.
7. Veit, R. and J. Clifford . 1985. Writing, Reading & Research Clifford. Bobbs-Merrill Educational Publications.