



जम्मू केन्द्रीय विश्वविद्यालय
Central University of Jammu

राया-सुचानी (बगला), जिला: सांबा-181143, जम्मू (जम्मू और कश्मीर), भारत
Rahya-Suchani (Bagla), District- Samba, 181143, Jammu (Jammu and Kashmir), India

Course Title: Research Methodology & Scientific Writing

Credit: 2 (L-2, T-0, P-0)

Course code:

Contact Hrs/Week: 2 Hrs

Course outcome:

To develop research skills and proficiency in scientific writing through critical analysis, experimental design, data interpretation, and effective communication, fostering scholarly contributions and academic excellence.

Learning outcome: Student will able to

1. Develop proficiency in research methodology, including data collection, analysis, and interpretation, to conduct rigorous scientific investigations.
2. Cultivate effective scientific writing skills, encompassing clarity, coherence, and adherence to conventions, to communicate research findings convincingly.
3. Foster critical thinking and ethical research practices, enabling the synthesis and dissemination of knowledge with integrity and professionalism.

Unit I

Basic principles of experimental designs, Literature survey and documentation, methods of data collection, analysis and testing of hypothesis, interpretation and presentation of the results. Characteristics of research, Types of research, Research and scientific method, types of research, Formulating a research problem, research Process.

Unit II

Choosing a mentor, lab and research question; maintaining a lab notebook. Concept of effective communication- setting clear goals for communication; determining outcomes and results. Presentation skills: PowerPoint; scientific poster preparation & presentation; participating in group discussions; Computing skills for scientific research - web browsing for scientific information search.

Unit III

Scientific writing skills: Importance of communicating science; problems while writing a scientific document. Scientific publication writing: elements of a scientific paper; drafting titles including abstract, introduction, materials & methods, results, discussion, references. Plagiarism; types of plagiarism, software for plagiarism, ethical issues; scientific misconduct.

Suggested Literature:

1. Valiela, I. (2001). Doing Science: Design, Analysis, and Communication of Scientific Research. Oxford: Oxford, University Press.
2. Gopen, G. D., & Smith, J. A. (1990). The Science of Scientific Writing. American Scientist, 78 550-558.
3. On Being a Scientist (2009). A Guide to Responsible Conduct in Research. Washington, D.C.: National Academies Press.

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