

# SYLLABUS FOR BURET-2025

## DEPARTMENT OF BIOTECHNOLOGY:: BODOLAND UNIVERSITY

The Department of Biotechnology, Bodoland University shall follow the syllabus of NE-SLET (Life Science) for BURET-2025. For Research Methodology, the syllabus is attached.

### RESEARCH METHODOLOGY

#### COURSE CONTENT:

##### **Unit I: Defining the Research Problem::5 Lectures** Defining

Research Problem, Selection of research Problem, Necessity of Defining the Problem, Technique Involved in Defining a Problem, An Illustration Conclusion.

##### **Unit II: Literature Collection::5 Lectures**

Need for review of literature, Review process and bibliography, Research Reading, Discriminative Reading, Consulting Source Material, Working Bibliography, Index Card and Reference Card, Different system of Citing References.

##### **Unit III: Research Design/ Experimental Design 15 Lectures**

Meaning of Research Design, Need for Research Design, Features of a Good Design, Important Concepts Relating to Research Design, Different Research Designs, Basic Principles of Experimental Designs, Developing a Research Plan

**Sampling Design:** Census and Sample Survey, Implications of a Sample Design, Steps in Sampling Design, Criteria of Selecting a Sampling Procedure, Characteristics of a Good Sample Design, Different Types of Sample Designs, Selection of Random Sample, Random Sample from an Infinite Universe, Complex Random Sampling Designs.

**Methods of Data Collection:** 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.

##### **Unit IV: Interpretation and Report Writing 8 Lectures**

Meaning of Interpretation, importance of 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.

##### **Unit V Process of communication 7 Lectures**

Presentation skills - formal presentation skills, PowerPoint; defending interrogation; scientific poster preparation & presentation; participating in group discussions; Computing skills for scientific research- web browsing for information search; search engines and their mechanism of searching; hidden Web and its importance in scientific research; internet as a medium of interaction between scientists; effective email strategy using the right tone and conciseness

  
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## Unit VI Scientific Communication: 5 lectures

Technical writing skills - types of reports; layout of a formal report; scientific writing skills - importance of communicating science; problems while writing a scientific document; plagiarism, software for plagiarism; scientific publication writing: elements of a scientific paper including abstract, introduction, materials & methods, results, discussion, references; drafting titles and framing abstracts; publishing scientific papers - peer review process and problems, recent developments such as open access and non-blind review; plagiarism; characteristics of effective technical communication; scientific presentations; ethical issues; scientific misconduct



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