**SUBJECT TITLE**: Research Methodology (242205)
**COURSE TEACHER:** Roushan Jahan (T-05) & Md. Abdus Salam (T-08)

| Chapter No & Chapter Title | Number of Classes with Class Title | Learning Outcomes<br><br>At the end of the class the students would be able to |
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| **1.**<br>**Introduction**<br>**(T-05)** | 1. Meaning of Research, Objectives. | 1. Explain the Meaning of Research and objectives. |
| | 2. Types of Research. | 1. Realize Types of Research. |
| | 3. Research Methods. | 1. Explain Research Methods. |
| | 4. Class:4. Data, Nature of Data, Accuracy and Reliability of Data. | 1. Explain Data, Nature of Data, Accuracy and Reliability of Data. |
| **2.**<br>**Nature of Research**<br>**(T-08)** | 5. Introduction to Non-Experimental Research. | 1. Define non-experimental research and identify its main characteristics.<br>2. Differentiate between exploratory research and other research types.<br>3. Explain when and why non-experimental and exploratory research designs are used. |
| | 6. Descriptive and Explanatory Research Designs. | 1. Describe the purpose and key features of descriptive research.<br>2. Explain the role of explanatory research in understanding cause-and-effect relationships.<br>3. Compare and contrast descriptive and explanatory research approaches with examples. |
| | 7. Experimental and Quasi-Experimental Research | 1. Differentiate between experimental and quasi-experimental research designs.<br>2. Identify the key components of a true experiment (e.g., control group, random assignment).<br>3. Assess the strengths and limitations of quasi-experimental designs in real-world research. |
| | 8. Basic and Applied Research. | 1. Distinguish between basic and applied research with clear examples.<br>2. Explain the importance of basic research for scientific knowledge advancement.<br>3. Evaluate how applied research addresses practical problems in society. |

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| | 9. Action Research and Evaluation/Impact Research. | 1. Define action research and describe its cyclical process for problem-solving.<br>2. Explain the purposes and methods of evaluation and impact research.<br>3. Analyze how action and evaluation research contribute to organizational or social change. |
| **3.**<br>**Quantitative and Qualitative Methods (T-05)** | 10. Key Features of Each of the Methods. | 1. Realize Key Features of Each of the Methods. |
| | 11. Focus Group Discussion, Direct Observation Method. | 1. Explain Focus Group Discussion, Direct Observation Method. |
| | 12. In-Depth Interviews. | 1. Explain In-Depth Interviews. |
| | 13. Rapid Rural Appraisal, Participatory Rural Appraisal. | 1. Analyze Rapid Rural Appraisal, Participatory Rural Appraisal. |
| | 14. Sample Survey, Generation of Models. | 1. Explain Sample Survey and Generation of Models. |
| | 15. Class:15 Testing Theories and Hypotheses using Statistical Techniques. | 1. Analyze Testing Theories and Hypotheses using Statistical Techniques. |
| **4**<br>**Sampling Technique (T-08)**<br>. | 16. Understanding Population and Sample. | 1. Define the concepts of population and sample in research methodology.<br>2. Differentiate between a population and a sample with examples.<br>3. Explain the importance of choosing an appropriate sample to represent a population. |
| | 17. Population Census and Sample Survey. | 1. Describe the process and significance of conducting a population census.<br>2. Identify the main differences between a census and a sample survey.<br>3. Evaluate when to use a census versus a sample survey based on research needs. |
| | 18. Characteristics of a Good Sampling Design. | 1. List and explain the key characteristics of an effective sampling design (e.g., representativeness, accuracy).<br>2. Assess how a good sampling design impacts the reliability of research findings.<br>3. Identify flaws in poor sampling designs and suggest improvements. |

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| | 19. Types and Tools of Sampling Design. | 1. Differentiate between probability and non-probability sampling techniques with examples.<br>2. Identify various sampling methods such as random sampling, stratified sampling, cluster sampling, etc.<br>3. Select appropriate tools and methods for different research scenarios. |
| | 20. Importance and Limitations of Sampling. | 1. Explain the advantages of using sampling in research studies.<br>2. Discuss the limitations and potential biases associated with sampling.<br>3. Propose strategies to minimize sampling errors and improve data quality. |
| **5.**<br>**The Steps of Conducting a Research (T-05).** | 21. Formulating a Research Problem, Research Questions. | 1. Realize Formulating a Research Problem, Research Questions. |
| | 22. Constructing Hypotheses, Conducting a Study. | 1. Explain Constructing Hypotheses, Conducting a Study |
| | 23. Collection of Data, Structure of Model if applicable. | 1. Explain Collection of Data, Structure of Model if applicable. |
| | 24. Analyzing Data. | 1. Realize Analyzing Data. |
| | 25. Writing a Research Report. | 1. Explain Writing a Research Report. |
| **6.**<br>**Steps in Report Writing (T-08)** | 26. Formulating Research Questions and Objectives. | 1. Formulate clear and focused research questions based on a general research problem.<br>2. Differentiate between broad objectives and specific objectives in a research study.<br>3. Develop appropriate research objectives aligned with the research questions. |
| | 27. Conducting a Literature Review and Identifying Research Gaps. | 1. Summarize the key steps involved in conducting an effective literature review.<br>2. Critically evaluate existing studies to pinpoint research gaps.<br>3. Justify the importance of addressing specific research gaps in new research. |

| | 28. Developing a Theoretical or Conceptual Framework. | 1. Define and distinguish between a theoretical framework and a conceptual framework. 2. Construct a theoretical or conceptual framework based on literature findings. 3. Explain the role of frameworks in guiding research design and analysis. |
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| | 29. Analyzing Findings Using Descriptive and Inferential Statistics. | 1. Apply descriptive statistical techniques to summarize research data. 2. Conduct hypothesis testing using appropriate inferential statistical methods (e.g., t-test, F-test). 3. Interpret the results of descriptive and inferential statistics to answer research questions. |
| | 30. Addressing Limitations and Drawing Conclusions. | 1. Identify and discuss the limitations and constraints of a research study. 2. Analyze how limitations affect the interpretation and generalization of results. 3. Write strong, evidence-based conclusions that reflect the research objectives and findings. |