



STUDY GUIDE – 2026

Second Year BDS

Batch- XXVI (26)

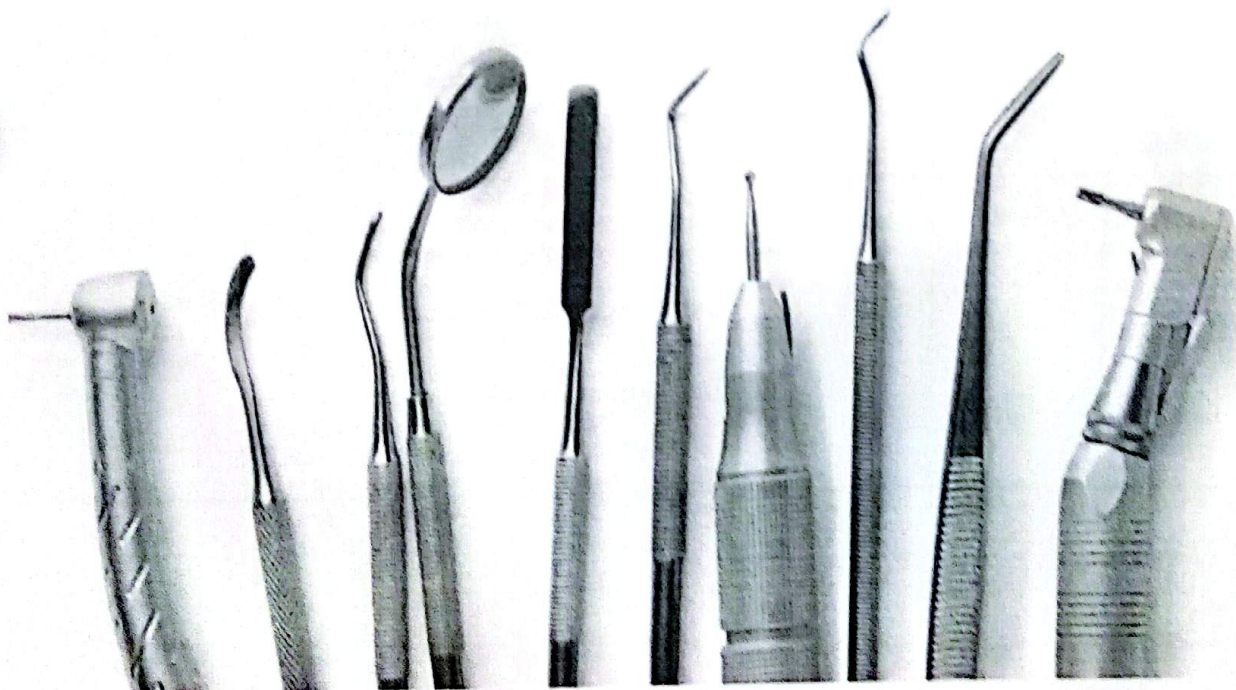
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RESEARCH				
Topic	Objectives	Teaching methodology	Outcome	Assessment Tools
Writing Synopsis	1. Develop a concise and clear synopsis of the research study. 2. Summarize the research background, objectives, and methodology. 3. Highlight the significance and expected outcomes of the study. 4. Ensure the synopsis is well-organized and easy to understand. 5. Adhere to required length and formatting guidelines.	Lectures, Research meetings, small group discussions digital library sessions.	Submission & approval of Synopsis from Institutional IRB.	MCQs, Summative assignments research based.
Data collection	1. Collect data using chosen methods (e.g., surveys, interviews). 2. Ensure data quality and accuracy. 3. Maintain participant confidentiality and anonymity. 4. Enter and manage data using SPSS and/or Excel. 5. Store data securely and organize for analysis.			
Writing methodology with appropriate study design	1. Describe the research design (e.g., experimental, observational). 2. Justify the chosen study design. 3. Outline the study setting, population, and sample. 4. Describe data collection methods (e.g., surveys, interviews). 5. Explain data analysis procedures.			
Designing a questionnaire	1. Define purpose and scope of the questionnaire. 2. Identify relevant variables to be measured. 3. Select suitable question types (e.g., multiple-choice, Likert scale). 4. Construct clear, concise, and unambiguous questions. 5. Ensure validity and reliability of the questionnaire.			
Introduction to biostatistics and types of data	1. Introduction to Biostatistics 2. Define biostatistics and its importance. 3. Explain the role of biostatistics in medical research. 4. Identify key concepts and applications of biostatistics. 5. Types of Data 6. Classify data into qualitative (categorical) and quantitative (numerical). 7. Identify types of quantitative data (discrete, continuous).			



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	8. 3. Distinguish between nominal, ordinal, interval, and ratio scales.			
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RESEARCH				
Topic	Objectives	Teaching methodology	Outcome	Assessment Tools
Introduction to biostatistics and types of data	1. Introduction to Biostatistics 2. Define biostatistics and its importance. 3. Explain the role of biostatistics in medical research. 4. Identify key concepts and applications of biostatistics. 5. Types of Data 6. Classify data into qualitative (categorical) and quantitative (numerical). 7. Identify types of quantitative data (discrete, continuous). 8. 3. Distinguish between nominal, ordinal, interval, and ratio scales.	Lectures, Research meetings, small group discussions digital library sessions.	Submission & approval of Synopsis from Institutional IRB.	MCQs, Summative assignments research based.
Summarizing and displaying categorical data: frequencies, tables and graphs	1. Summarize categorical data using frequency distributions. 2. Construct frequency tables and interpret results. 3. Create and interpret bar charts, pie charts, and histograms. 4. Use SPSS to generate frequency tables and graphs. 5. Effectively communicate results through clear and informative displays.			
Displaying Scale data and the concept of normal and skewed distribution	1. Summarize and display scale data using histograms and stem-and-leaf plots. 2. Understand the concept of normal distribution and its characteristics. 3. Identify and interpret skewed distributions (positively, negatively). 4. Use SPSS to generate histograms and normality plots. 5. Interpret results to determine if data follows a normal distribution.			
Summarizing scale data: measure of central tendency	1. Calculate and interpret measures of central tendency (mean, median, mode). 2. Understand the advantages and limitations of each measure. 3. Apply the appropriate measure of central tendency for different types of data. 4. Use SPSS to calculate measures of central tendency. 5. Interpret results to understand the central tendency of the data.			



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Summarizing scale data: measure of dispersion	1. Calculate and interpret measures of dispersion (range, variance, standard deviation). 2. Understand the advantages and limitations of each measure. 3. Apply the appropriate measure of dispersion for different types of data. 4. Use SPSS to calculate measures of dispersion. 5. Interpret results to understand the spread of the data.	Lectures, Research meetings, small group discussions digital library sessions.	Submission & approval of Synopsis from Institutional IRB.	MCQs, Summative assignments research based.
Threats to Validity	1. Identify and understand threats to internal, external, construct, and statistical conclusion validity. 2. Recognize biases and errors that affect research accuracy. 3. Learn strategies to control confounding variables, ensure generalizability, and improve measurement tools. 4. Apply methods to minimize threats to validity in dental research design and analysis.			

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RESEARCH

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Clinical Trials And Good Clinical Practices Guidelines	1. Explain clinical trials, their purpose, and ethical considerations. 2. Learn Good Clinical Practice (GCP) guidelines and regulatory requirements. 3. Describe the process of designing, conducting, and reporting clinical trials. 4. Identify risks and biases in clinical trial design and implementation.	Lectures, Research meetings, small group discussions digital library sessions.	Submission & approval of Synopsis from Institutional IRB.	MCQs, Summative assignments research based.
Systematic Review	1. Define the purpose and steps of conducting a systematic review, including formulating questions, searching, and selecting studies. 2. Assess study quality, extract data, and perform meta-analysis when applicable. 3. Use tools like the PRISMA checklist for quality assessment. 4. Ensure transparency and reproducibility in the process. 5. Critically analyze and report findings, addressing limitations and conclusions.			