

**School of Management, Gautam Buddha University organized a 10 Days Research Methodology Course on Integration of AI in Research from 3rd to 13th Dec 2024 , sponsored by the Indian Council of Social Science Research (ICSSR), New Delhi.**

The course aimed to focus on the integration of AI in research. It was designed to equip researchers with practical skills and advanced knowledge, the programme focused on blending modern technology with traditional research tools. Through expert-led sessions, the course fostered a collaborative and innovative research ecosystem, addressing both theoretical and applied research needs. This was an intensive program designed to give hands on experience to the participants of using advanced research techniques, with Artificial Intelligence (AI) tools.

**The inaugural function held on 3<sup>rd</sup> Dec 2024** .The program featured distinguished guests, Prof. R.K. Sinha (Vice Chancellor of GBU), Prof. D.K. Madaan, (Punjabi University, Patiala), including, Prof. N.P.Melkania (Dean Academics), Dr. Indu Uprety (Dean, SoM), Prof. Shweta Anand (Course Director), and Dr. Varsha Dixit (Course Co-Director).

Prof. R.K. Sinha, Vice Chancellor of Gautam Buddha University, said that the program underscored GBU's commitment to academic excellence and research. With the support of ICSSR, we aim to provide an enriching learning experience for the participants from all over the country,” Prof Sinha stated.

The day began with a session led by Prof. D.K.Madaan on Introduction to Research, Idea of research; Basic tenets of qualitative research and quantitative research

During the second session, Prof. D.K Madaan focused on Research Philosophies and Paradigms. Prof. D.K Madaan highlighted the role of GDP in Indian Economy, importance of sustainable development and role of research in policy formulation. He said that it can be of great help for decision makers.

The first day laid the foundation for understanding research fundamentals. Prof. D.K Madaan elaborated on the importance of sustainable development and its alignment with research in policy formulation. Participants gained insights into the application of research in addressing real-world economic challenges, with examples such as India's GDP and policy impacts. The session clarified the role of research in policy-making and its applications in improving the nation's economic framework, giving participants a strong theoretical base.The programme ended with Vote of thanks given by Dr. Varsha Dixit, Co-course Director of the workshop

**The second day i.e 4th Dec 2024**, The day began with a session led by Prof. Pankaj Madan on Research Methods: Field Research concept and Process. During the second session, Prof. Pankaj Madan focused on Introduction to Qualitative Research and methods: Ethnography, Participant observation, Interview, Focused Group Discussion and Case Study Method. The session equipped participants with actionable strategies for conducting fieldwork effectively and understanding human behavior in diverse settings. The day concluded with a session by Prof. Rahul Pratap Singh Kaurav , highlighted the integration of AI into social science research methodologies, emphasizing AI's ability to analyze complex societal patterns and trends, offering a futuristic approach to traditional methodologies.

**The third day i.e 5th Dec 2024**, The day began with a session led by Prof. Debarshi Mukherjee introduced participants to systematic literature review (SLR) methodologies including accessing and utilizing library and e-library resources. Taught systematic approaches to gather and analyze existing research, ensuring participants could build robust theoretical frameworks During the second session Dr. Mohd. Atif demonstrated theoretical framework building, and problem formulation.. The session was insightful and provided practical exposure to cutting-edge tools, bridging the gap between traditional methods and modern technology

The day concluded with a session by Prof. Amrita Bajaj on sampling techniques, where she discussed various sampling methods and determining appropriate sample sizes to ensure data reliability. Empowered participants with techniques to select representative samples, crucial for impactful research.

**The fourth day i.e 6th Dec 2024**, The day began with a session led by Prof. Ashutosh Kumar on Data collection, Primary and Secondary data types, Data collection instruments. During the second session, Prof. Ashutosh Kumar focused on interview method and shared experiences a researcher may encounter in a field.. Highlighted the importance of data quality in ensuring credible research outcomes

The day concluded with a session by Prof. Pushendra Kumar on Hypothesis Testing, explaining its significance in validating research assumptions and ensuring statistical rigor. Made complex statistical techniques accessible to participants by using AI and fostering confidence in data analysis.

**The fifth day i.e 7th Dec 2024**, The day began with a field visit to learn observation technique of data collection and how a researcher can minimize the errors which may affect the research work. The students visited Red fort a historical place and Delhi Haat to learn various cultural diversities.

The sixth day i.e 9th Dec 2024, featured sessions covering generative AI, descriptive statistics, and inferential methods, helping researchers enhance their statistical and analytical skills. The day began with a session led by Prof. SM Khan on “Development and Standardisation of Tests – Generative AI.”

Prof. Khan highlighted how generative AI is transforming academic and research frameworks by enabling assessments to become more adaptive and personalised. He explained how AI-based tools can improve test design and standardisation, offering researchers insights into AI’s practical applications in modern research.

During the second session, Prof. Khan focused on descriptive statistics, particularly testing for normality. He provided participants with foundational knowledge on analysing data distribution and assessing normality. The session emphasised on the importance of conducting such tests to ensure accurate interpretation of research outcomes.

The day concluded with a session by Prof. Gaurav Garg on inferential statistics, specifically non-parametric tests. Prof. Garg discussed techniques for handling non-normally distributed data, equipping participants with essential tools for robust data analysis. He explained the significance of non-parametric methods in modern research, helping participants gain confidence in analysing complex datasets.

**The Seventh day i.e 10th Dec 2024**, the day began with a session led by Prof. Ajai Pratap Singh on Multivariate Analysis- ANOVA, Correlation, Regression etc. During the second session, Prof. Ajay Pratap focused on Multivariate Analysis- Factor Analysis .

The day concluded with a session by Prof. Bhupendra Som ; discussed statistical analysis in the age of AI, demonstrating the practical application of AI tools in statistical research. The session enabled participants to uncover relationships and draw meaningful conclusions from multivariate data and provided clarity on reducing data complexity while retaining its core information. Helped participants integrate AI tools into their research workflows.

**The eighth day i.e 11th Dec 2024**, The day began with a session led by Prof. Dhaval Maheta on SEM with PLS. During the session, Prof. Dhaval Maheta focused on deep analysis by using SEM with PLS. The session provided a deeper understanding of complex statistical modeling . The day concluded with a session by Prof. Arun S. Karat on Writing and Getting Funding on Research Proposals, Book Writing and Research Report Writing , Citation and referencing , handling editorial comments. He also emphasized the importance of proper citation practices and adhering to academic writing standards.

Delivered actionable insights on writing compelling research proposals and handling editorial reviews to  
Enhanced participants' ability to communicate their research effectively

**The Ninth day i.e 12th Dec 2024**, the day began with a session led by Prof. Prof. Geetika on Research Ethics and Plagiarism. During the second session, Prof. Prof. Geetika focused on Research paper writing, Publication Process and Identifying Good Journals . Shared strategies to identify reputable journals and navigate the publication process. She also guided participants through the publication process, including selecting reputable journals and responding to editorial feedback. This session was pivotal in ensuring participants understood the ethical and procedural standards of academic research

The day concluded with interactive sessions and discussions with the participants sharing their learning and experiences.

**The tenth day i.e 13th Dec 2024**, the day began with a session led by Prof. H.K.Dangi, on Bibliometric analysis and visualization using AI tools, showcasing innovative methods to measure research impact.

During the second session, the course directors; Prof. Shweta Anand (Course Director), and Dr. Varsha Dixit (Course Co-Director). facilitated participant presentations, evaluated by respective panels. It was a platform to allow participants to apply their learning, showcasing practical outcomes of the course. The day concluded with a session by

## **Conclusion**

The program's diverse topics and expert-led sessions provided participants with a comprehensive understanding of modern research methodologies, emphasizing the integration of AI tools. Each session was crafted to ensure theoretical knowledge and practical applications, was tailored to bridge traditional methodologies with modern AI-driven tools, fostering a comprehensive understanding of research practices.

