<u>**SVKM NMIMS Global UNIVERSITY,**</u>
<u>**DHULE**</u>
<u>**Syllabus: Research Methodology**</u>
<u>**PhD Entrance Examination**</u>

1. **Introduction to Research:**
   Meaning and importance of Research
   Types of Research
   Research Design and Stages
   Selection and Formulation of Research Problem, Objective(s), and Hypothesis.
   Developing Research Plan – Exploration, Description, Diagnosis, Experimentation, Determining Experimental and Sample Design.

2. **Data Collection:**
   Sources of Data – Primary and Secondary
   Types of Data – Categorical (nominal and ordinal), Numerical (discrete, continuous, ratio and interval)
   Methods of Data Collection: Survey, Interviews (in-depth or Key Informant interviews), Focus Group Discussion (FGD), Observation, Records or Experimental Observations.

3. **Data Processing and Analysis:**
   Statistical Graphics – Histograms, Frequency Polygon, Ogive, Dotplots, Stemplots, Bar Graphs, Pareto Charts, Pie Charts, Scatterplots, Boxplots
   Descriptive Analysis – Frequency Distributions, Measures of Central Tendency, Measures of Variation/Dispersion, Skewness and Kurtosis, Measures of Relative Standing
   Qualitative Approaches Including Grounded Theory, Ethnography, Narrative Inquiry, Phenomenology and Case-Study.

4. **Scientific Writing:** Structure and Components of Scientific Reports – Types of Report – Technical Reports and Thesis – Significance – Different steps in the preparation – Layout, Structure and Language of Typical Reports – Illustrations and Tables – Bibliography, Referencing and Foot Notes.
   Preparation of the Project Proposal – Title, Abstract, Introduction – Rationale, Objectives, Methodology – Time frame and Work Plan – Budget and Justification – References.

5. **Research Ethics:** Research Ethics Committees/Institutional Review Board – Roles and Importance
   Intellectual Property rights – Commercialization, Royalty
   Reproduction of Published Material – Citation and Acknowledgement, Plagiarism.
   Role of AI in advanced research
   Ethical and Responsible use of AI in academic research

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