Flow Chart of the Scientific Process

Planning and Preparation

- Making observations and raising research questions
- Reviewing literature/available information
- Defining the research problem and setting research objectives
- Formulating hypotheses
- Establishing the research design/sampling strategy
- Mobilizing resources
- Work plan and timeframe
- Proposal writing



Data Collection

- · Pilot testing the research/sampling design
- Lab and field procedures
- Applying techniques used in particular disciplines
- Accuracy, precision, reliability, validity, sources of error



Analyzing, Interpreting and Presenting Data

- Descriptive and inferential statistics
- Hypothesis testing
- Selection of the most appropriate statistical methods
- Types of analyses based on research design
- Drawing conclusions and presenting data



Scientific Writing and Presentation of Research Findings

- Types of Publications and Presentations
- Merging data presentation with scientific writing
- Format and Style in Scientific Writing and Presentation
- Citing literature and writing references
- First draft to publishing the manuscript
- Oral presentations
- Poster presentations

