CONTENT OUTLINE

Unit I Introduction:

- Need for research in nursing,
- Problem solving and scientific method
- Terminology used in research
- Scope of nursing research: Areas, types, problems,
- Elements and ethics in research

Unit II Research Approaches:

- Types: Qualitative and Quantitative
- Historical, Descriptive, Experimental

Unit III Research Designs:

- Research process – steps, concepts and constructs
- Research problems and statements,
- Review of literature,
- Definition of terms,
- Assumptions, Limitations,
- Hypothesis and variables

Unit IV Sampling:

- Population and sample
- Sample size
- Sampling technique
- Problems of sampling

Unit V Theoretical Context:

- Purpose and use of theories
- Nature and characteristics
- Using, testing, and developing conceptual framework, models, & theories

Unit VI Tools and methods of data collection:

- Methods of data collection: quantitative and qualitative
- Tools for data collection and their development
- Validity and reliability of tools
- Feasibility of study
- Conduct of research

Unit VII Analysis and interpretation of data:

- Qualitative and quantitative analysis
- Interpretation of data
- Conclusion and generalizations
- Summary and discussion

Unit VIII Reporting and utilizing results:

- Communication of research results
- Writing research report, methods and style
- Writing style for scientific articles for publication

Unit IX Analysis and critiquing of research reports and articles

Unit X Developing research proposal

B. STATISTICS   Theory 50 Hours

PURPOSE: To develop understanding of statistical methods and apply them appropriately**.**

SPECIFIC OBJECTIVES

At the end of the course the students will be able to:

1. Explain basic concepts related to statistics
2. Identify scope of statistics
3. Organize and tabulate the data and present it
4. Use descriptive and inferential statistics to predict the results
5. Apply & interpret measures of central tendency & measures of variance
6. Identify concepts related to probability
7. Use parametric and non- parametric statistical methods.
8. Draw conclusions of the study and to predict statistical significance of the results
9. Describe vital and health statistics and their use
10. Use statistical packages for analysis of data

COURSE CONTENT

Unit I Basic concepts related to statistics:

- Significance & Scope of statistics
- Levels of measurement

Unit II Organization and presentation of data:

- Graphic & tabular presentations

Unit III Measures of central tendency:

- Mean, mode, median,
- Quartile deviation
- Percentile, range

Unit IV Measures of variability:

- Need and meaning
- Range, Mean deviation,
- Standard deviation,

- Normal distribution, Skewness, Kurtosis

Unit V Measures of relationship:

- Correlation: Need and meaning
- Scatter diagram method
- Karl Pearson's coefficient of correlation
- Rank order correlation,
- Simple linear regression analysis

Unit VI Theoretical frequency distributions:

- Need & meaning
- Probability,
- Binomial distribution, Poisson distribution,
- Normal distribution

Unit VII Testing Hypotheses:

- Non parametric tests - Chi-square, Median test, Mann Whitney U test
- Parametric tests – t test, ANOVA,
- Test of independence, goodness of fit

Unit VIII Use of computers in data analysis

- Use of statistical packages

Unit IX Use of statistical methods in psychology and education:

- Scaling - Z score and Z scaling,
- Standard score and T scores,
- Reliability of test scores: test-retest method, parallel forms, split half method

Unit X Designs and meaning:

- Experimental designs
- Comparison in pairs, randomized block designs, Latin squares

Unit XI Introduction to multivariate statistical technique:

- Multiple regression, discriminant canonical correlation,
- Principle component and factor analysis

Unit XII Application of statistics in health:

- Vital and health statistics
- Registration of Birth and Death,
- Measures related to fertility, morbidity, mortality