

Biostatistics

1. Course Title: Biostatistics

2. Course Number: (301)

3. Credit Hours: Total of (3) credits:

Theory (1) credit.

Lab. (2) credits.

4. Course Calendar: Total (5) hours weekly of (15) weeks:

Theory (1) hrs.

Lab. (4) hrs.

5. Placement: third year / first semester.

6. Course Description:

This course is designed to provide fourth year students with basic principles of statistical procedures, understanding the ideas, methods used in biostatistician studies and their applications to health.

7. Course Goals:

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

- Demonstrate the statistical methods for collecting data, summarization, tabulation, presentation and analysis.
- Apply manual calculation for descriptive and inferential tests.
- Apply certain statistical program as excel or SPSS which are used for data analysis in computer.
- Deal with different data sets such as hospital records.

8. Course Outline:

The Theoretical Content

- Unit 1: Introduction to statistics:** (1) hr
- Definition of statistics / biostatistics.
 - Aims of statistics & statistic's types.
 - Statistical methods (descriptive & inferential statistics)
- Unit 2: Data collection:** (2) hrs
- Data sources.
 - Population, Samples & their types.
 - Variables and its types.
- Unit 3: Descriptive Statistical Methods:** (5) hrs.
- Grouping data in tables (single & double frequency tables).
 - Representing grouped & ungrouped data in graphs,
 - Measures of central tendency (mean, median, mode) for grouped & ungrouped data.
 - Measure of variation (range, standard deviation, variance, standard score & coefficient of variation)
- Unit 4: Inferential Statistical Methods:** (2) hrs.
- Probability distribution.
 - Type of distribution.
 - Normal distribution & its characteristics.
- Unit 5: Estimation (Point estimation & Interval estimation):** (4) hrs.
- Testing hypotheses (Z, T. test).
 - Contingency tables & Chi-square for independence.
 - Correlation & simple regression analysis.
- Unit 6: Vital statistics (Morbidity & Mortality):** (1) hr.
- Hospital records.

The Laboratory Content

- Data collection. (6) hrs.
- Descriptive Statistical Methods: (20) hrs.
 - Grouping data in tables (single & double frequency tables)
 - Representing grouped & ungrouped data in graphs
 - Measures of central tendency (mean, median, mode) for grouped & ungrouped data.
 - Measure of variation (range, standard deviation, variance, standard score & coefficient of variation).
- Inferential Statistical Methods. (20) hrs.
- Vital statistics. (10) hrs.
- Hospital records. (4) hrs.

9. Learning Resources:

Blackboard, Calculators, Computers

10. Teaching / Learning Strategies:

Lectures, daily assignment, computer lab, field visits.

11. Student Evaluation:

Midterm Examination	30%
Daily Assignment	10%
Lab's Applications	10%
Final Examination	50%

Total	100%