**Course: 347-551 Medical Statistics and Statistical Computing** ⭘ Secondary responsibilities ⚫ Main responsibilities

**5 PLOS with 5 CLOs**

| **Program learning outcomes (PLOs)** |  | **Course Learning Outcomes (CLOs)** | **Teaching and learning approach** | **Student assessment** | **Topics in this subject** |
| --- | --- | --- | --- | --- | --- |
| PLO1 To generate morally and ethically sound research. |  |  |  |  |  |
| PLO2 To design research studies in response to the needs of stakeholders. | ⭘ | 1. Students can identify appropriate statistic tests and calculations relevant to the research questions considering the stakeholders’ needs. | 1. Pre-read module  2. Hands-on exercise of statistic tests  3. Discussion of analytical outputs | 1. Class attendance  2. Active participation in hands-on exercise |  |
| PLO3 To use information technology to search health-related information for research. | ⭘ | 2. Students can identify the statistic package used for the application of R software. | 1. Installation of R open source software for data analysis.  2. Demonstration how to search and manipulate the package used | 1. Class attendance  2. Active participation in hands-on exercise |  |
| PLO4 To relate theoretical health concepts into research through critical appraisal of the evidence. |  |  |  |  |  |
| PLO5 To generate community-based, community-oriented, community-participating field research with skills in leadership and problem-solving. | ⭘ | 3. Students can explain the analytical methods used in community-based research. | 1. Pre-read module  2. Hands-on exercise of statistic tests  3. Discussion of analytical outputs | 1. Class attendance  2. Assignment | * Descriptive Statistics / Probability Theory * Probability distributions * Sampling Distribution |
| PLO6 To appropriately appraise research findings amidst the evolving state of knowledge in epidemiology. | ⚫ | 4. Students can interpret the analytical outputs from different statistic methods. | 1. Pre-read module  2. Hands-on exercise of statistic tests  3. Discussion of analytical outputs | 1. Class attendance  2. Assignment  3. Written examination | * Introduction to R * Confidence Interval Estimation and Hypothesis Testing for a Single Population Mean and a Difference between Two Population means * One-Way Analysis of Variance * Sampling Distribution of the Sample Mean and the Difference between Two Population Means * Sampling Distribution of the Sample Proportion and the Difference between Two Sample Proportions * Simple Correlation and Regression Analysis * Simple & Multiple Regression Analysis * Non-Parametric Statistics |
| PLO7 To demonstrate mastery of principles of epidemiology and statistics in relation to health research. |  |  |  |  |  |
| PLO8 To analyze big or complex data with clear presentation advocating appropriate usage of the findings. | ⭘ | 5. Students can indicate appropriate type of statistical technique for analysis of data in a given dataset. |  | 1. Class attendance  2. Active participation in hands-on exercise | * Analysis of Categorical Data |
| PLO9 To produce high-quality research article(s) translatable to policy and practice. |  |  |  |  |  |

**Matrixes PLOs and CLOs of Medical Statistics and Statistical Computing**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **CLOs** | | | | | |
| **PLOs** |  | 1 | 2 | 3 | 4 | 5 |
| 1 |  |  |  |  |  |  |
| 2 | ⭘ | x |  |  |  |  |
| 3 | ⭘ |  | X |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 | ⭘ |  |  | x |  |  |
| 6 | ⚫ |  |  |  | x |  |
| 7 |  |  |  |  |  |  |
| 8 | ⭘ |  |  |  |  | x |
| 9 |  |  |  |  |  |  |